

THE ATHENÆUM

Journal of English and Foreign Literature, Science, and the Fine Arts.

No. 768.

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For the convenience of Subscribers residing in remote places, the weekly numbers are released in Monthly Parts, stitched in a wrapper, and forwarded with the Magazines.—Subscriptions for the Stamped Edition for the Continent, for not less than three Months, and in advance, are received by M. HAVARD, 3, Quai Malaquais, Paris, or at the Athenæum Office, London. For France, and other Countries not requiring the postage to be paid in London, 25fr. or 12. 2s. the year. To other Countries, the postage is added.

UNIVERSITY OF LONDON.

NOTICE IS HEREBY GIVEN, that the following CLASSICAL SUBJECTS have been selected for Examination in this University:—
For the MATRICULATION EXAMINATION in 1842: KENOPHON.—The First Book of the Hellenics; LIVY.—The Thirty-first Book.

For the Degree of BACHELOR OF ARTS: In 1842: EURIPIDES.—The Medea.
CICERO.—The Somnium Scipionis; The Second Philippic; The Orations for Ligarius, and for Archias.
In 1843: DEMOSTHENES.—De Coroni.
VIRGIL.—The Eclogues, and first six Books of the *Aeneid*.
In 1844: HERODOTUS.—The Fourth Book.
CÆSAR.—The Civil War, and the Fifth and Sixth Books of the Gallic War.

By order of the Senate,
R. W. ROTHMAN, Registrar.

Somerset House, 5th July, 1842.

JOHN STOCK, Esq. DECEASED.—All Persons standing INDEBTED to the estate of the late JOHN STOCK, Esq. of POPLAR, Middlesex, are requested immediately to pay the amounts of their respective debts to Mr. Edward Stock, Poplar, or to his account at the London Joint-Stock Bank, and all persons having any CLAIMS on the estate, are requested immediately to forward the same to Mr. E. Stock, as above. Poplar, July 11, 1842.

MR. EDWARD STOCK begs to inform the Friends of his late lamented and respected Father, that he intends CONTINUING the ACADEMY at Poplar, (which will BEP. the German, French, and Italian Languages, and Latin and Greek Classics, Mathematics, Arithmetic, and every branch necessary to form the education of youth. The domestic arrangements are under the superintendence of an English Lady, the wife of the Director. The highest references given. An English Gentleman, returning shortly to Germany, has offered to take charge of pupils. For cards of address, &c. apply to Messrs. Hatchard & Son, 187, Piccadilly; Mr. F. Roland, 20, Berners-street, Oxford-street; or Messrs. J. J. Ewer & Co. 6, Newgate-street.

EDUCATION IN GERMANY.—A PROFESSOR, a native of Saxony, who has been appointed by the Government Director of an Institute, HERBIVENS into his House a limited number of PUPILS. He is assisted by Professors and Masters of the first eminence. The studies include the German, French, and Italian Languages, Latin and Greek Classics, Mathematics, Arithmetic, and every branch necessary to form the education of youth. The domestic arrangements are under the superintendence of an English Lady, the wife of the Director. The highest references given. An English Gentleman, returning shortly to Germany, has offered to take charge of pupils. For cards of address, &c. apply to Messrs. Hatchard & Son, 187, Piccadilly; Mr. F. Roland, 20, Berners-street, Oxford-street; or Messrs. J. J. Ewer & Co. 6, Newgate-street.

SCOTTISH INSTITUTION FOR THE EDUCATION OF YOUNG LADIES.—EDINBURGH, 9, MORAY PLACE.

THE NINTH SESSION COMMENCES ON MONDAY, the 3rd of October next. BRANCHES TAUGHT IN THE ESTABLISHMENT.

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|---|-----------------------|
| 1. History and Geography..... | Mr. GRAHAM. |
| 2. Junior English Department.... | Mr. GRAHAM. |
| 3. Writing, Arithmetic, and Book-keeping..... | Mr. TROTTER. |
| 4. Singing..... | Mr. FINLAY DUN. |
| 5. Theory of Music, and Elements of Composition..... | Mr. CHARLES HARROITT. |
| 6. Pianoforte..... | (J. SIMSON, U.S.A.) |
| 7. Drawing and Perspective..... | GEORGE LEES, A.M. |
| 8. Mathematics, and Lessons on Physical Science, including Astronomy and the Use of the Globes..... | (Monsieur DUBUC. |
| 9. French Language and Literature..... | Dr. DUBUC. |
| 10. Italian Language and Literature..... | Mrs. HARRIS. |
| 11. German Language and Literature..... | Dr. KOMST. |
| 12. Dancing and Calisthenics..... | Mrs. LOWE. |

LECTURES.—The following Course of Lectures extends over a period of Four Years:—

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|---|----------------------------|
| 1. Natural Philosophy (including Astronomy)..... | GEORGE LEES, A.M. |
| 2. Chemistry..... | ANDREW FIFE, M.D. F.R.S.E. |
| 3. Natural History..... | Dr. MURRAY, F.R.C.S. &c. |
| 4. Geology and Mineralogy..... | Dr. MURRAY, F.R.C.S. &c. |
| 5. Ancient and Modern History..... | Dr. KOMST. |
| 6. Foreign Literature and the History of the Fine Arts..... | Dr. KOMST. |

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Five Experienced Assistants for Singing and the Pianoforte are regularly engaged.
FEES.—For the whole Session, 21l.
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For the last Quarter of the Session (for annual pupils only)..... 2 0 0
Pupils not attending the whole Session, each Quarter..... 6 6 0
For the Use of the Library (for each Pupil attending Music, per Quarter)..... 0 10 6
Quarter Days, 1st October, 15th December, 1st March, and 1st May.

Each Pupil may attend as many of the Classes as her Parents or Guardians may judge proper, and the Lectures given in the Institution.
Miss MURRAY, the Lady Superintendent, receives a limited number of BOARDERS, who are the Institution. The Young Ladies have the advantage of the instruction of resident French and English Governesses. Terms.—Under 12 years of age, 40 Guineas; above 12 years of age, 30 Guineas per annum. Several private families also receive Young Ladies as Boarders. Terms 30 Guineas, and upwards, per annum.
It is strongly recommended to enter Pupils at the commencement of the Session, when the Classes are formed, that they may derive the advantage of going through the regular course of instruction from the beginning.
Prospectuses, containing full information, when requested, sent free to any part of the kingdom.
All letters to be addressed to Mr. Lees, the Secretary, or to Miss Murray.

TO LADIES' SCHOOLS.—A CLERGYMAN receiving PUPILS, wishes to make an EXCHANGE on terms of mutual accommodation.—Apply to F. W., at Pocock's Library, Bath.

EDUCATION.—Terms, Six Guineas per Quarter. At MINERVA HOUSE, STAMFORD HILL, Middlesex, YOUNG GENTLEMEN are liberally boarded and carefully educated by Mr. S. PRESTON, who has been 25 years engaged in the profession. The above-named charge includes Board, Education, Washing, &c., with instruction in the English and French Languages; Arithmetic, Algebra, Geometry, and other departments of the Mathematics; the Elements of Natural and Experimental Philosophy, Chemistry and Astronomy; Geography, History, Writing, Drawing, Singing, and Gymnastic Exercises. An inspection of the accommodation, and an inquiry into the treatment and mode of instruction, are respectfully solicited. School recommended July 15.—Omnibuses from the Flower-pot, Bishopsgate-street, every half hour.

SCHOOL PREMISES.—To be DISPOSED OF, the best-arranged PREMISES in BRIGHTON for a SCHOOL. The school and household appointments are perfect, will accommodate upwards of thirty Pupils, two Masters, and a Matron; a large playground. The desirable private residence attached is appropriate for the conductors of such an Establishment, and has a garden, all in a thorough state of repair. Immediate possession may be had.—For particulars apply to Mr. Cressy, Auctioneer, North-street, Brighton.

THE RAISING AND ASCENDING OF WATER from Wells, and Channels and other Situations, by its own Weight, without any other lifting power.—The inventor has made a small model of the Machine, which is to be seen in active work, daily, between the hours of One and Four o'clock, at applying to Mr. M., No. 23, Church-street, No. 4, square.—Admission GRATIS; but all communications by letter must be post paid.

WILKIE STATUE.—At an ADJOURNED MEETING of the Committee, held at the Thatched House Tavern, St. James's-street, on Saturday, July 2. The Right Hon. Sir R. PEEL, Bart. P.M. in the chair, it was resolved.

That a sub-committee be appointed, under whose superintendence the statue shall be executed, and that such committee consist of the following members:—
Sir Thomas Baring, Bart. (Peter Laurie, Esq.)
His Grace the Duke of Buckingham (Viscount Mahon, M.P.)
John Burnett Esq.
Sir A. W. Colclough, R.A.
John Cunningham, Esq.
Peter Cunningham, Esq.
Henry Hallam, Esq.
Rt. Hon. H. Labouchere, M.P.
Edwin Landseer, Esq. R.A.
Sir Peter Laurie.

The committee then proceeded to select the artist, and at the close of the ballot the scrutineers reported the numbers to be:—
For Mr. Joseph, 26; for Mr. Campbell, 13; for Mr. Bailey, 3; for Mr. Watson, 3; for Mr. Easton, 2; for Mr. Lough, 6; for Mr. Marshall, 0; when the chairman declared the election to have fallen on Mr. Joseph.
The Committee gave great satisfaction in stating that the Trustees of the National Gallery had acceded to the request of the Subscribers, that the statue be placed in the Inner Hall of that Gallery.

ALLAN CUNNINGHAM, Hon. Sec. PETER CUNNINGHAM, Assist. Sec.
Subscriptions (to be advertised) continue to be received by Sir Peter Cunningham, 1, Pall Mall East, Messrs. Coutts & Co. Strand; Park-square; Allan Cunningham, Esq. Hon. Secretary, and Peter Cunningham, Esq. Assist. Secretary, 27, Lower Belgrave-place; the Union Bank of London, 5, Abchurch-lane; 13, Abchurch-lane; 4, Pall Mall East, Messrs. Coutts & Co. Strand; and Messrs. Smith, Payne & Smiths, Mansion House-street.

Sales by Auction.
SOUTHGATE'S ROOMS.
By Messrs. SOUTHGATE & SON, at their Rooms, 22, Fleet-street, on FRIDAY, July 22, and four following days (Sunday excepted).

A MISCELLANEOUS COLLECTION OF BOOKS, Ancient and Modern, including many of the greatest rarity; among which will be found, Nash's Mansions of England in the Olden Time—British Gallery of Contemporary Portraits, 2 vols., 1. p.—Dugdale's Antiquities of Warwickshire Illustrated, 1. p.—Walpole's Works, 3 vols., 1. p.—Supplement to the Encyclopedia Britannica, 6 vols.—Lycens' Magna Britannia, 6 vols.—Environ's of London and Supplement, 6 vols.—Monthly Review from the commencement in 1740 to 1832—Edinburgh Review from the commencement in 1802 to 1832—Pictorial Shakespeare, 4 vols.—Shakespeare's Plays, by Johnson and Steevens, 10 vols.—Green's History of England and Wales, with Supplement, 8 vols.—Hume and Smollett's England, 13 vols.—Hooker's Roman History, 6 vols.—British Essays, by Chalmers, 4 vols.—Voltaire's Works, 17 vols.; together with a choice selection of Books of Prints; a Circulating Library, comprising Modern Novels and Romances by Popular Authors; a few Lots of Stationery; also a fine-bound Hamlet, Barre's Olden, and all the recent improvements, elegant Gothic case, gilt front pipes, height 6 ft. 9 in., depth 4 ft. 7 in., breadth 2 ft. 4 in.; and a small and valuable Collection of Philosophical and Scientific Instruments, comprising a Working Model of a Steam Engine, Air Pump, Chemical Cabinet, Microscopes, &c. &c.
May be viewed, and Catalogues had.
* Valuations made of Law Libraries, Office Furniture, &c.

SALE OF VALUABLE ORCHIDACEOUS PLANTS.
Messrs. J. C. & S. STEVENS will SELL, by AUCTION, at their Great Rooms, 28, King-street, Covent-garden, on WEDNESDAY, 20th July, and following day, at 12 for 1 o'clock precisely, in Lots.

A LARGE AND VALUABLE COLLECTION of ORCHIDACEÆ, just arrived in most beautiful condition, and collected from a range of country comprising upwards of 300 miles in the neighbourhood of Guatemala, in Central America, and consisting principally of the hardy cold climate plants, adapted for the Greenhouse.
May be viewed the day prior and mornings of sale, and Catalogues had of Messrs. J. C. & S. Stevens, 28, King-street, Covent-garden.

RARE SHELLS.
Messrs. J. C. & S. STEVENS will SELL, by AUCTION, at their Great Rooms, 28, King-street, Covent-garden, on SATURDAY, 23rd July, at 12 o'clock.

THE DUPLICATE SHELLS from a well-known Collection; comprising a richly coloured specimen of the Orange Cowry, several varieties of the Cedo Nulli, Zonatus, Nobilis, Atracinae, Genuinus, and other rare Conus; also many scarce Helices, Bulimi, Volutes, &c., to which is added a small parcel of Shells, from South America, in their native state. On view Friday and morning of sale, and Catalogues had.

THE following romantic and interesting Memoir is circulated among the munificent by the friends of Madame Asmar, of Bardud, who has been reduced to poverty by the persecutions of the Turkish Government for their religious zeal. Her case is well known to Lord Aberdeen, the Count St. Aulaire, the Chevalier Bunsen, &c.—The father of Madame Asmar was the Prince of Mahomedan religion, a Christian of Bagdad, of wealth and family, who became obnoxious to the Government of that place, most probably on account of his riches, but his religious zeal furnished the pretext. He was accused of a desire to overturn the Mahomedan religion, and of having discovered immense hoards of gold under the ruins of Nineveh. Upon these allegations he was thrown into prison, where a succession of horrid tortures put an end to his life. All his family suffered under the same persecuting spirit; his brothers fled to Ispahan, where they died. One alone, Arabick, a Dierberkin, remained; he was seized and tied to a wild horse, which was driven to the desert; this one escaped as by a miracle, but he remains in a state of utter destitution, the mother died of grief, leaving her daughter Teresa Asmar, the subject of this memoir. The father, the Chevalier Bunsen, took refuge with the Emir Beschir, of Mount Lebanon. But imbued with the same spiritual zeal as his father, she quitted the Emir's hospitable roof, and with her father's fortunes she proceeded to Rome. From Rome she proceeded to Paris, where M. Guizot obtained for her a small sum from the Turkish Government as an indemnification. With this she subsisted, and also by the sale of jewels belonging to her family, and subsequently by copying and translating Arabic MSS., but a gradually increasing weakness of sight has compelled her to relinquish this mode of procuring the means of existence. When in Paris lately she was introduced to the late Lord Munster, whose kind benevolence suggested to her the possibility of his being able to serve her at the Court of St. James's in her reclamations from the Turkish Government. But alas! these hopes have vanished—she arrived in town the day after his melancholy death, and has been for two months subsisting on promises, which she fears, with too much foundation, will never be realized. Her friends, compassionating her situation, and to save her the humiliation, derogatory as she imagines it to be, to her birth and early habits, have resolved to place the case before the humane and beneficent, trusting that their generosity may enable her to return to her native land and end her days in peace. The Count St. Aulaire has kindly certified to the truth of the above statements as follows:—
"C'est avec un vif intérêt que je recommande Madame Asmar, dont l'histoire me met sous les yeux les motifs de ses douleurs."
Paris, 22 Juin, 1842. (Signed) ST. AULAIRE, Ambassadeur de France.

And her history is known at the Royal Asiatic Society, 11, Grafton-street, Bond-street, where Subscriptions will be received. Her residence is at 21, King-street, Portman-square. Subscriptions will also be received by Coutts & Co. Strand.

CONCHOLOGY.—Having purchased a considerable portion of the Paris collection of SHELLS, recently distributed at auction, I respectfully invite the attention of purchasers to the light of the celebrated *Favos* and *Strophomena*, the *Rafinesquina pulchra*, the *Coni splendidus* and *Orbigny*, which will amply repay any amateur the trouble of calling.—Lovell's Catalogue, 5, King William-street, Strand.

CHURTON'S LIBRARY, 26, HOLLES-STREET.
The whole of the above-named Library is offered for sale. The Library is expended in the purchase of New Publications in this and Foreign—the sale of the Duplicates, after they have gone through the Library, being an ample remuneration to the Proprietor, who has been supplied with the following Catalogues:—
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HENRY G. BOHN, Bookseller, of No. 4 and 5, YORK-STREET, COVENT GARDEN, finds it necessary to state, that he is not in the least degree connected in business with any of the establishments of the same name, and that his not the firm advertised as relating. To prevent mistakes, HENRY G. BOHN begs that his Christian name and address, "YORK-STREET," may be observed in favours intended for him. He has much the largest and finest stock in Europe, and the books all marked at moderate prices. His Guinea Catalogue may still be had on the terms constantly advertised.

OFFICE for PATENTS of INVENTION AND REGISTRATION OF DESIGNS. No. 63, Lincoln's Inn-fields.—Inventors and Capitalists are informed, that a PROSPECTUS, containing much useful information as to securing BRITISH and FOREIGN PATENTS, and protection of Designs and Patterns, may be had gratis from Mr. Alexander Prince, No. 63, Lincoln's Inn-fields, who will be happy to advise intending Patentees as to the most economical course to pursue.

DR. DALTON and the BRITISH ASSOCIATION.—Copies of the Medal struck in honour of Dr. Dalton, and in commemoration of the Meeting in Manchester of the British Association, by the Proprietors of BRADSHAW'S JOURNAL, are on Sale at Mr. W. J. ADAMS, 170, Fleet-street, London. A copy of this Medal, in gold, was presented by the Publishers to Dr. Dalton on the 16th of June last, in the presence of the Mayor of Manchester and a select number of the Members of the British Association. As a likeness it is pronounced perfect, having been reduced from the statue by Chantry, and finished from photographic portraits recently taken. Copies sent by post, 6d. extra.

PORTRAITS by the CALOTYPE PROCESS stand foremost among the wonders of the present age, being produced by the agency of light, during a sitting of a few seconds; from the picture thus obtained, any number of the most faithful likenesses may be had without further trouble to the sitter. They are indelible, and can be had only of Mr. Collen, 29, Somerset-street, Portman-square. Price One Guinea each.

DAGUERRETYPE PORTRAITS, under the patronage of Her Majesty and the Nobility, are taken daily at the ROYAL ADELPHI GALLERY, Lowther Arcade, Strand, by Mr. CLAUDET'S instantaneous process. The sitting generally occupies less than one second; in fact, the operation is so instantaneous that he can now with facility take portraits of infants, and even correct likenesses of horses, dogs, and other favourite animals. Some of the finest of Her Majesty's horses have lately been taken by him with singular fidelity and beauty. Mr. Claudet's portraits are taken with backgrounds representing landscapes, interiors, &c., and are fixed by a peculiar process, which prevents their changing colour or being easily rubbed off.

TO TOURISTS and TRAVELLERS.—EDINBURGH and GLASGOW RAILWAY.

The scenery on this line is of the grandest and most interesting character, and a most delightful journey cannot be planned as this season than from London by steamer to Leith, from thence by railway to Glasgow, and then through the Highlands. The trains start simultaneously from Edinburgh and Glasgow, as follows:—

Morning, 7, 9, and 11. Afternoon, 3, 5, and 7.
First class elegant coupe carries runs with the 1 and 3 o'clock trains, and with others, if specially required. The coupe holds four, but is restricted to three, unless the parties engaging it choose to admit a fourth. Fares: First class, 8s.; coupe, 16s.; fourth person, 8s.; second, 4s.; and third, 2s. 6d. according to season, 20s., 25s., and 15s. One horse, 12s.; three ditto, 32s.
Sunday trains from each end, half-past 7 morning, half-past 5 afternoon, carrying each class, and calling at all stations. Fares as above.
N.B. Children between 10 and 11 half-fares; under 10 free, if with a person paying full fare for the same journey.
STIRLING.—Passengers booked to and from Edinburgh and Stirling, and to and from Glasgow and Stirling, by the 7, 11, 3, and 5 o'clock trains.
Every facility and information will be afforded on application at the termini at Edinburgh and Glasgow.
H. G. WRIGHT, Secretary.
Glasgow, 1st July, 1842.

SCOTTISH UNION INSURANCE COMPANY.—Chief London Office, 40, West Strand.

Instituted 1820, and incorporated by Royal Charter. LIFE ASSURANCE. The Directors have been enabled, in consequence of the care exercised in the admission of Lives, to make additions for the last seven years, averaging no less than fourteen per cent. on the sums insured. For example, the additions made to Policies of 1000l. each, vary from 13d. 7s. 6d. to 18d. 17s. 6d. according to the age at entry—a result, it is believed, far more favourable to the insured than any other Company has hitherto accomplished, when the LOW RATES of Premiums charged by the Corporation are taken into consideration.

A printed Statement, containing full particulars of this large Bonus, may be had on application to the Secretary.
The next division of Life Profits was taken place in December, 1840, being an interval of five years; and persons entering before the 1st of August next, will enjoy one year's additional rating, and rank at next division of profits for the complete years.
Forms of Proposal may be had at the Offices, No. 40, West Strand, and No. 78, King William-street, City.
F. G. SMITH, Secretary.

SCOTTISH (WIDOWS' FUND) ASSURANCE SOCIETY. Constituted by Act of Parliament, established A.D. 1815, on the principle of MUTUAL CONTRIBUTION.

ACCUMULATED FUND, INVESTED UPWARDS OF 1,100,000l. ANNUAL REVENUE UPWARDS OF 100,000l. Amount of Capital Sum insured since the commencement of the Society, upwards of FIVE MILLIONS SIX HUNDRED THOUSAND POUNDS.

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Trustees, Sir James Gibson-Craig, of Riccarton, Bart. William Scott Moncrieff, Esq. of Fossaway. William Mitchell Innes, Esq. of Parsonsgreen. James Ballour, Esq. of Fife. Edward Lloyd, Esq. Banker, Manchester.
The President, Vice-President, and Trustees, are all connected with the Society by Assurances of at least three years' standing.

The general principles of this Society are now so almost universally known and appreciated, that it is unnecessary to do more in this form than to request a perusal of the lately published Prospectus, from which will be seen the very great addition which, during the last few years, has been made to the number of members, as the best practical evidence that can be had of the increasing estimation in which it is held by all classes of the community; and as in the present day so much is said of the large additions given by Life Offices, and as contrasts with its own the rate divided by others, it may be well to state thus generally, that whilst the Society at last periodical investigation declared a Bonus addition at the rate of 9 per cent. per annum on the amount of the original sum assured and the previously declared Bonus, but addition was in the case of the early Policies upon the original sum assured alone at the rate of nearly 21 per cent. per annum of retrospective Bonus from 1811 to 1838, upwards of 3 per cent. per annum of contingent prospective Bonus from 1838 to 1840.

Every information may be readily obtained, on application to the Manager at Edinburgh, or to any of the Society's Agents throughout the country.

Parties wishing to effect Assurances, so as best to meet any particular contingency, or effect any special object, will receive the requisite information, and have the suitable form of proposal transmitted to them; and all official communications of this nature are considered strictly confidential.

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25 1 1 10 1 2 1 1 10 1
30 1 1 11 1 1 1 1 11 1
35 1 1 11 1 1 1 1 11 1
40 3 0 10 3 15 5 6 10 0

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Prospectuses and every information obtained on application at the Offices as above, or to the Agents of the Company appointed in every principal Town in the Kingdom.

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JOSHUA MILNE, Actuary.

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LONDON, SATURDAY, JULY 16, 1842.

REVIEWS

The United Irishmen, their Lives and Times.
By R. R. Madden, M.D. 2 vols. Madden
& Co.

If history were, indeed, "philosophy teaching by examples," the largeness or the exiguity of the scene, its nearness or distance in time and place, would but slightly affect its value and estimation. Lessons of political wisdom may be drawn from the *res gestæ* of a St. Marino, as effectively as from those of the all-absorbing republic of Rome; and genius and self-devotion should as much commend themselves to reason and to the affections, when exerted in some remote and obscure warfare, as when exhibited at a Trafalgar or a Waterloo. Such, however, is not the practical effect. With the mass of mankind, history is but a vast picture book, a collection of dissolving views, put forth to keep the children of a larger growth out of mischief; and they are valued in proportion to their gaudy colouring, or, at best, for their picturesque effect. The imagination has a much larger part than the judgment in our historical appreciations; and abstract humanity, unsupported by interests, and unbacked by associations, is, what it has so well been named, an old almanack.

What then can be advanced in behalf of the volumes we are about to examine, and what their claim on public attention? The "United Irishmen" and their story, we shall be told, is an episode in a provincial history, which has already passed from the remembrance of a generation, whose mind has been absorbed and whose sensations have been exhausted by the grander spectacle of an European revolution. To this class of objectors it were but a bootless labour to reply, by pointing to the moral and political importance of the tale; to offer it, as the most pregnant instance in British story of the misery of corruption. It were, perhaps, scarcely less idle to declare the tragic interest of the story, a drama simple in action, prepared, combined, matured, and brought to its catastrophe, in all the perfection of Aristotelian poetics; or to enumerate the characters of the *dramatis personæ*, great in passion, prominent in good or in evil, and agitated by vast and sudden reverses of fortune. Such, however, is the fact: but much and frequently as Irish affairs have of late years been brought in strong relief before the English eye,—frequently as the injuries and the claims of Irishmen have been the objects or the pretences of contending British factions,—the subject is as yet more unknown to Englishmen, than the circumstances of many of their remotest and poorest colonies; nor can one educated man in a thousand amongst us give a clear and satisfactory reason for the countless anomalies which present themselves in the actual condition of the sister country.

This, however, is not all: it has been well and truly observed, that whoever desires to study the intimate nature of the English government, to discover the manner in which the representative system has been worked, by those who have made themselves the masters of its powers, must look to Ireland for the most demonstrative illustration. The Irish representation and administrative, up to the Union, were a magnified and distorted image or reflection of their prototypes on this side the water. Power exercised with less responsibility, representation on a narrower basis, and selfishness less controlled by public opinion than with us, formed a combination, whose results, like the preparations of morbid anatomy, were luminous in proportion as they were diseased. To Englishmen, it is a matter of no small import to gather from Irish story the leading fact,

that a fictitious representation and a government of class interests carried with them the seeds of an inevitable and calamitous end. All the energies of an uncontrolled and not feeble series of Irish administrations applied to consolidating and fortifying that system, ended in their utter incapacity to continue it in activity. The Union with England was politically inevitable; and the rebellion which preceded it, even if fomented, as is asserted, for the Machiavellian purpose of hurrying on that consequence, was still a demonstration of its necessity. The example is striking, and deserves to be meditated beyond the sphere of mere Irish interests.

To the thinking few, then, the story of the Irish rebellion, as it is called, is not yet exhausted, and Dr. Madden's work is not a superfluity in literature. Its nature is thus declared towards the close of the first volume:—

"A full and faithful history of the rebellion yet remains to be written. The object of this work is to place before the public some of the scattered memorials of it, collected from those who were actors in that struggle. The reminiscences of those persons, it seemed to me, were likely to perish with them, had no effort been made, in their latter years, to preserve them. Most of these persons were far advanced in years—some, indeed, on the verge of the grave—and during the last seven years (the period of collecting these materials) many of them have died. To enter into any lengthened account of the sanguinary struggle—of its successive engagements, from the 20th of May, 1798, when 'the rising' of the peasantry commenced in the counties of Kildare and Wicklow, to the 8th of September, when the French, under Humbert, surrendered at Ballinacuck, would be foreign to my purpose. The humbler task remains to be attempted, of illustrating the events referred to in the foregoing pages, by memoirs of those persons who took a prominent part in the rebellion, or of those whose names are associated with it."

Coming as Dr. Madden does after so many biographers of United Irishmen and their contemporaries, it cannot be expected that much novelty remained for even the most industrious to glean in relation to the causes which brought these men into action. As far as the great outlines of the story of the rebellion are concerned, little, if anything indeed, was left to be told. The corruption of the Irish parliament, the prostration of Irish commerce before the supposed interests of England, the predominance of English ideas in all matters of government, the encampment of a handful of English proprietors on the soil (the monopolists of wealth and power), and the abuse they made of their supremacy, are sufficiently understood. The rising importance of the Catholic population also, and the influence of the American and French revolutions on the minds of the dissenting Protestants, are equally clear; and the policy of the dominant faction, the masters of all the clues of the conspiracy, and the possessors of abundant means of crushing it, who nevertheless suffered events to take their course, and finally, by a series of measures, comparable only with the war of the Palatinate, drove the ignorant and innocent peasantry into overt acts of resistance, is well known. Still a vast deal of detail, a mass of illustrative anecdote, and of not unimportant fact, was afloat in Irish society, and likely to perish, which was wanting to clear up doubts;—and of these Dr. Madden has possessed himself, to enrich his narrative. To the readers disposed to study the policy of the Irish government of those days, the volumes before us present the additional advantage of a clear and succinct narrative of a vast many particulars, necessary to be thoroughly understood, in order to form a correct notion of the character of the events. Dr. Madden has more particularly thrown into strong relief the leading circumstance, that as the assertion of

national independence was the first link in the chain which terminated in the Union, so the spirit which was then developed was the same which manifested itself in every successive effort at resistance. The Volunteers were the parents of the first association of United Irishmen. The progressive violence of the government ripened this association into an armed organization of the country; and the same spirit which animated these associations still smoulders in the Repeal agitation.

The work commences with an introductory sketch of the History of Ireland by another hand; which is written with succinct clearness. This sketch bears testimony to the truth of Captain Rock's very humorous and spirited Memoirs, which, after all its author's subsequent labours in the same field, remains the best and most intelligible history of Ireland yet produced. Dr. Madden's own pages open with an account of the events between 1782 and 1798. To ordinary apprehensions, nothing is so extraordinary as the little practical advantage which Ireland gained by that measure. Dr. Madden, who justly attributes the subsequent rebellion to the inefficiency of the disenthralled parliament, as properly seeks for the causes of its inutility in the neglect of Catholic emancipation and parliamentary reform:—

"The services of the Volunteers are, on the whole, greatly exaggerated by our historians; the great wonder is, how little substantial good to Ireland was effected by a body which was capable of effecting so much. As a military national spectacle, the exhibition was, indeed, imposing; but it is not merely the spectacle of their array, but the admirable order, conduct, and discipline of their various corps—not for a short season of political excitement, but for a period of nearly ten years—that, even at this distance of time, are with many a subject of admiration. * * But what use did the friends and advocates of popular rights make of this powerful association of armed citizens, which paralyzed the Irish government, and brought the British ministry to a frame of mind very different to that which it hitherto exhibited towards Ireland? Why, they wielded this great weapon of a nation's collected strength, to obtain an illusory independence, which never could rescue the Irish Parliament from the influence of the British minister without reform, and which left the Parliament as completely in the power of the minister, through the medium of his hirelings in that House, as it had been before that shadow of parliamentary independence had been gained: the only change was in the mode of using that influence in the Parliament: the material difference was but between an open and a secret interference in its concerns. * *

No great measure of Parliamentary Reform, or Catholic Emancipation, was seriously entertained, or wrung from a reluctant, but then feeble government. The error of the leaders was, in imagining that they could retain the confidence of the Catholics, or the co-operation of that body, which constituted the great bulk of the population, while their convention publicly decided against their admission to the exercise of the elective franchise."

This was a fatal mistake; but to make the oversight a reproach against the leaders, would be to look at events by the lights of retrospection. Certain it is that, at that time, public opinion had not reached to the height of such a speculation; though nothing can be more clear, at the present day, than that a parliamentary opposition, based upon an insufficient system of representation, could not long continue formidable. It had no deep and pervading sympathies with the public, nor the public with it. Every succeeding struggle served, therefore, to strengthen a high-pressure government: evils were aggravated, till all confidence was lost in whatever was established; and a pressure from without was substituted for the ineffectual resistance of a parliamentary party, which had dwindled into insignificance. The downfall of the Volunteers

and the substitution of the United Irishmen, is thus pithily explained by Dr. Madden:—

"It is not inconsistent with truth, though it may be with the military glory of this institution of the Volunteers, to say that it combined, in one great national phalanx, the talent, the intolerance, the chivalry, the extravagance, the prodigality, the embarrassment, the republicanism and patriotism, for one brief epoch, of all ranks and classes. Here we find the ill-assorted names of the Earl of Charlemont and the Right Hon. Robert Stewart (Lord Castlereagh)—of John Claudius Beresford and Henry Grattan—of Toler and Ponsonby—of Saurin and Flood—of Col. Rowley and Major Sandys—of Ireland's only Duke and Sir Capel Molyneux—of the rabid zealot, Dr. Patrick Duignan, and the Right Rev. ultra-liberal, the Bishop of Derry—of Archibald Hamilton Rowan and Jack Giffard—of the red-hot patriot, James' Napper Tandy, and the facetious knight and slippery politician, Sir Jonah Barrington—and last, not least in celebrity, of George Robert Fitzgerald, of fighting notoriety, and Mr. Joseph Pollock, the great advocate of peace and order. These incongruous names are found jumbled together in the pages of the history of the volunteer association. The world never saw an army of such heterogeneous materials collected, from all conflicting parties, for a patriotic purpose."

A perception of the necessity for a union of all classes in order to effect any useful reforms, was a necessary consequence:—

"The idea of general union is said to have originated with the rebel, Theobald Wolfe Tone; but the merit or the demerit of its origin evidently belonged to the Volunteers, whom the King himself, and Parliament, session after session, thanked for their devoted loyalty. When this meeting took place in Dungannon, in which the Irish people were told the western world was temptingly holding out a system of equal liberty to mankind, to profit by which these Volunteers declared it was necessary to unite men in Ireland, of all religious persuasions, for one common object,—when this meeting took place, Tone was a loyal subject, and Colonel Robert Stewart was the chairman of a meeting at which sedition was pretty plainly inculcated, in the example held forth of the successful struggle for American independence. But, in the course of the extraordinary events of this world, Tone was sentenced to be hanged, for attempting to carry into effect the project implied in the example so temptingly held forth, by 'uniting men of all religious descriptions'; and Col. Robert Stewart (subsequently Lord Castlereagh), who sanctioned with his presence the sedition of the sword-in-hand deliberators on reform, became a foremost man in those councils which consigned the United Irishmen to the gallows."

Still it happened that the desire and the plan of a rising against the English authorities and the establishment of an Irish republic, were very closely confined to the Protestants of the north. The Catholic priests hated and feared the irreligious example of the French republicans, and their flocks (too ignorant and abject to understand their position) would have remained tranquil spectators of the fray, had they not been driven to despair by the persecution of the governing powers, and by the military destruction of their humble dwellings. This striking fact was clearly shown in the Memoir of Holt, published by Mr. Crofton Croker, (*Athen.* No. 532,) and is illustrated by the clearest details of the motives and views of all the parties in the work before us.

The notion of a recurrence to the political union of the two countries, seems to have originated with the government in 1782, from a dread inspired by the prospect of an independent parliament; a dread which was converted into a certainty, by the conduct of the Irish legislature in the affair of the regency. But the Union was afterwards rendered more immediately necessary by the exhaustion of all disposable means of influence, by the rapacity and the intolerance of those who had undertaken to manage for the English minister. The idea

having been adopted by Pitt, Dr. Madden endeavours to make it appear that the rebellion was fomented and brought to a head, as a satisfactory demonstration of the necessity of the measure. In the accusation there may be some truth. It is possible that Mr. Pitt might have no objection to obtain a sufficient reason for uniting the two kingdoms, to present to the British Parliament; and therefore might have listened with complacency to the plausible politics of the Irish administration. But the plan of drawing the rebellion to a head, and so of crushing for ever the national party, may more reasonably be assigned to the fears of those who saw in Irish independence the overthrow of their monopoly of ascendancy. Motives so powerful can alone explain the adoption of so detestable a course. The fact is constant; but we are unwilling to believe it the result of a deliberate volition of a British minister, influenced only by the sole desire to hurry on a political measure.

In the following passages Dr. Madden sets forth what he believes to have been the object of the party:—

"It is generally supposed that the Orangemen in the north were animated by a blind, indiscriminate fury against the people, solely on account of their religion. This is not a fair statement, and whoever inquires into the history of these times will find it is not true. These men were impelled, as their descendants are, by a simple desire to get possession of property belonging to people who had not the power to protect it, and to give their rapacity the colour of a zeal for the interests of their own religion. It is doing the Ascendancy party a great injustice, to suppose that their animosity to their Roman Catholic countrymen arose from a spirit of fanaticism, or of mistaken enthusiasm in their religious sentiments. The plan of converting souls by converting the soil of the old inhabitants of a country to the use of the new settler, is of an ancient date. * * The penal code was framed for the protection of confiscated property; and the assumed hostility to the religion of the people who were dispossessed, was only a practice in accordance with the purport and pretence of the iniquitous statutes, which had already legalized three general confiscations within a period of 200 years. This legalized system of rapine and proscription has been productive of evils which still are felt, and those who, along with the lands of the proscribed people, obtained all the political privileges that were thought essential to the security of their new possessions, would have been more just than the generality of mankind, if, having power to protect the spoils they had obtained, or were encouraged to expect, they had not abused their privileges, and did not see in every extension of the people's liberties, another encroachment on the limits, now daily narrowing, of their power, property, and political pre-eminence."

The progress of Dr. Madden's narrative of the origin and decline of the United Irishmen, exposes the dreadful tale of a systematic employment of instigators and spies. This brings us into contact with an old acquaintance, Mr. Thomas Reynolds, the well-known informer, whose appearance as a London jurymen once excited so powerfully the indignation of the public. In our review of the biography of this hero, by his son, (*Athen.* No. 582,) we commented at length on the improbability of that gentleman's display of his father's motives, and of their common denial of pecuniary corruption. Our doubts on this subject have been more than justified by Dr. Madden's discoveries, who has obtained and published 'An account of secret service money applied in detecting treasonable discoveries, pursuant to the provisions of the Civil List Act of 1793.' On the strength of this document he is enabled to give the following items of the cost of this man's, Reynolds's, *unpurchased* testimony. The value of the disclosure is too great and too various to permit its being here passed in silence:—

" 1798, Sept. 29, Mr. T. Reynolds received	£1000
" Nov. 16, Ditto ditto	2000
1799, Jan. 19, Ditto ditto	1000
" Mar. 4, Ditto ditto	1000
—'to complete 5000l.'—And, moreover, on the 14th of June, 1799, Mr. Reynolds received his annuity of 1000l., 'in full to the 25th of March, 1799;' from which period till his death, the 18th of August, 1836, his pension continued to be paid to him. The amount of that pension was 1000l. Irish, or 920l. British: he received it for a term of thirty-seven years.	
"The gross amount for the above period, at 920l. per annum, is	£34,040
Gratuity before the trials of Bond, M'Cann, and Byrne	500
Gratuities between Sept. 1798, and March 4, 1799	5000
Consulship at Lisbon, four years at 1400l. per annum	5600
Consulship at Iceland, two years at 300l. per annum	600
	£45,740

"This enormous sum of 45,740l., the 'disinterested friend of his country' received; and as the pension on the Irish civil list reverts to his widow and to his two sons, who are now in the prime of life, it is by no means improbable that one of the parties may survive the person to whom it was originally granted some five-and-twenty or thirty years; and if so, the people of Great Britain will have the further gratification of paying another sum of twenty or five-and-twenty thousand pounds more, for the credit of Lord Castlereagh's government in Ireland, (nominally of Lord Camden's), and as a tribute of respect to the memory and worth of Mr. Thomas Reynolds."

To this general exposure is appended one of a more particular import, which we cannot resist noticing. Among the reasons given by the younger Reynolds tending to refute the popular version of his father's infamy, and to prove that he did not betray Lord Edward Fitzgerald, it is stated, that so great was his affection for that nobleman, that he twice advanced him money to effect his escape; and also gave him pistols and ammunition for his protection. From the whole circumstances of the case, it is clear that the Irish government wished to drive Lord Edward out of the country rather than to take his life, and that Reynolds was the agent employed in that matter. Speaking of Lord Clare, Dr. Madden says—

"Mr. Moore has recorded a trait of his character, in reference to Lord Edward Fitzgerald, which shews his nature to have been intended for better things, than his political course would lead one to expect of him. A few days previously to the arrests at Bond's, he said to Mr. Ogilvie, 'for God's sake get that young man out of the way, the ports shall be open to him.'"

The two sums of 50l. each, given in gold to Lord Edward, when gold was more than scarce, were, in all likelihood, part of 500l. paid to Reynolds in the first instance, by under-secretary Cooke, and given to Lord Edward with the design of facilitating his escape; but of the pistols the "account of secret service money" leaves no doubt:—

"Mr. Reynolds having deprived himself of his pistols, on the 15th of March, the act was considered by him, and at a later period it would seem, was recognized by government, as one done for the public service, for these pistols were replaced by Major Sirr, and the bill for the case purchased on this occasion, by the Major for his friend, was duly presented to Mr. Cooke, and the subsequent payment of it was not forgotten."

"1798, July 26, Major Sirr, for pistols, for Mr. Reynolds . . . £9 2 0"

Some apology may, perhaps, be due to our readers, for thus entering upon the question of Mr. Reynolds's reputation, a matter of no value to the public at the present day. But if the extract from which we have quoted throws a light on the paid informer, he also, in turn, throws a light upon the extract. This is a de-

document of great interest and curiosity, an ample justification of the most odious imputation fixed upon the government of those days; but while it dashes to the earth Reynolds's pretensions to disinterested generosity, it likewise exposes an extravagant lavishing of money in other quarters;—for what services, Mr. Reynolds's history affords a sufficient exponent. One point alone now remains clouded and obscure; namely, the means which enabled this man to extort so disproportionate a reward for what he was known to have done. Lord Castlereagh, reckless as he may have been in his waste of public money, could hardly have been the dupe of Reynolds's representations of loss. Why then have paid him such sums? Why have placed him in honourable stations of public service? Why have stood godfather for his respectability? This is, and probably will always remain, a mystery. Dr. Madden does not state by what means he obtained his document; nor are we certain that it has not been published before; though it does not seem likely that had either of the Reynoldses been aware of its existence, they would have ventured on the tale they put forth. Of the authority of the paper there can be little doubt. It carries with it ample internal evidence of its truth.

The great mass of materials collected in these volumes are chiefly of an anecdotal character. But the details of this fatal conspiracy are of so melancholy a nature, that it is difficult to select such as will prove acceptable to our readers; nor can they easily be abstracted from the narrative. Apropos to the trial of the Sheares's, is a curious instance recorded of the way in which a scintilla of truth may give rise to a mass of substantial falsehood. It relates to Lord Chief Justice Carleton:—

"I have already adverted to Lord Carleton, the chief justice of the common pleas, who presided at the trial of the Sheares, being the townsman and one of the most intimate friends of their father. A very erroneous impression had gone abroad, at the period of their trial—that his lordship had been left the guardian of his friend's children, and this belief prevails to the present day. The error with regard to Lord Carleton, there is reason to believe, had much to do with the death of that excellent nobleman Lord Kilwarden, in 1803. * * When his lordship's carriage was stopped in Thomas-street, on that fatal evening, on being surrounded by the insurgents, he was recognized by the individual I have alluded to; the general impression was, that the equipage was that of the commander-in-chief. The name of the latter, it is said, reached his lordship's ears, and he thought, his own name (and well might he have thought so) was one which the people had a right to respect—for he cried out to his assailants, 'Kilwarden, the chief justice!' At that moment he received the first pike-wound, from the hand of the ruffian who had recognized him. But the words 'chief justice,' were those only which were caught by the multitude, and they believed that the person who had fallen into their power, was Lord Carleton, the chief justice of the common pleas. * * On examining the will of the father of Henry and John Sheares, at the Prerogative Court, Dublin, I found no mention whatever made of Lord Carleton; but the care of his children was committed to the kindness of 'his dear friend, Richard, Earl of Shannon'—and the particular charge entrusted to him was, to see that unanimity and affection always prevailed amongst them. How, then, could those even intimately acquainted with the sons, confound Lord Carleton with the Earl of Shannon? 'Richard Boyle, Earl of Shannon, was created *Baron Carleton in England*, in 1786.' There can be little doubt but that, in the strange confusion of names and titles, which sometimes get jumbled together in Irish genealogies, the Irish chief justice, Lord Carleton, was confounded with the Earl of Shannon, Baron Carleton, of the English peerage."

In concluding, we may observe, that as the Irish rebellion was not an isolated fact unconnected with political antecedents, so it cannot be

regarded as unproductive of future consequences. The causes of discontent which provoked that outbreak, though partially removed by law, still, we fear, survive in the manner in which that law is administered; nor is it credible that the vast and wide-spreading organization of the United Irishmen was so completely broken, as to leave no traces behind it. Many of its detached links, not improbably, still subsist, and are applied to a resistance to agrarian oppression, of which such dreadful results occasionally are exhibited to fright the isle from its propriety. Evidences of a general intelligence among the peasantry, for the purposes of revenge (that wild justice of the hopeless), again and again exhibit themselves; and the same truth is evinced in the difficulty with which the offenders are traced and brought to justice: the spirit of conspiracy has descended from the higher to the lower classes.

Popular Tales of the Ancient Britons.—[Contes Populaires des Anciens Bretons]. By M. de la Villemarqué. Paris, Coquebert.

Popular Songs of Brittany.—[Barzas Breiz]. By M. de la Villemarqué. Paris, Delloye.

THE first of these very curious and interesting works, by one of the most diligent and enlightened of the authors of France, has just issued from the press, and must be welcomed by all lovers of ancient lore, both in his own country and in England and Wales, which latter principally it especially concerns. M. de la Villemarqué, a native Breton, and an enthusiastic lover of the place of his birth, has spared no pains or trouble in his labour of love to render the songs and stories of Brittany known in France. We had occasion to notice, some little time ago, the work of Lady Charlotte Guest on the subject of the romances, as well as Miss Costello's versions of the Breton ballads; some of the latter were also rendered, lately, by a writer in the *Quarterly Review*, and attention has been gradually drawn to these interesting relics, which cannot fail to please and amuse even those who are careless on antiquarian subjects. Our neighbours, amongst whom a higher order of literature is appreciated, and by whose government men of genius are encouraged, are constantly bringing out works of similar kind which may shame our too great fondness for ephemeral reading, and our avidity for mere gossip.

Kings, nobles, and clergy, as M. de la Villemarqué observes, have their history—justice has been done to the middle classes—the people alone have been forgotten; but in their popular songs and stories much can be learnt of manners and customs which may be sought for in vain elsewhere.

In the 'Popular Songs of the Bretons,' the enthusiastic author of these volumes has saved from oblivion some of the most charming and pathetic ballads which have ever appeared before the public, scarcely excepting those exquisite Scottish lays, to which they bear much resemblance. M. de la Villemarqué is peculiarly happy in his manner of rendering the simple and unadorned, but poetical, poems, to which he gives all his powers,—and they are distinguished, for he is essentially a poet, like the bards whose works he translates. In reading his beautiful versions we cannot but feel that the spirit of the original breathes through them; and we are more pleased that he has chosen measured prose as his vehicle, as, at least to English notions, modern French rhyme is destructive to poetry.

"That whetstone of the teeth, monotony in wire," would go far to make even the Breton ballads unendurable, as the Poet appears himself to think, by only giving a few metrical specimens at the end of his volumes, in *small type*.

Amongst many which might be cited, we limit ourselves to the following specimens, selected at hazard. We cannot but think, that the whole collected and offered to the English reader in an English dress, would be acceptable, and a worthy companion to the Spanish Ballads of Mr. Lockhart:—

"Song of the Souls.

"The 'black month' of November is that set apart by the Catholic church in which to remember and pray for the dead. In Brittany it is held in solemn veneration, and its ordinances strictly observed, On

the eve of All Saints crowds assemble in the churchyards to kneel uncovered on the wet grass beside the tombs of departed relatives, and to fill the hollow of their tombstones with holy water, or, according to the custom of the locality, offer oblations of milk. The church prayers cease not, the bells continue to sound all night, long and frequently; when vespers are ended, the rector, followed by all his clergy, make the circuit of the cemetery in procession, blessing every tomb as they pass. At every house on this night the cloth remains on the table, and the supper is not cleared away, for the souls are supposed to come and take their share; care is taken, also, that the fire should remain burning, as they repair to it to warm themselves as when they were living. When the inhabitants of the different houses are on the point of retiring to rest, having left all ready for their awful guests, mournful cries, mingled with the wailing of the wind, are heard, these proceed from the souls, who borrow the voices of the poor of the parish to demand prayers.

Blessings, in the sacred name,
Wait on all within this home;
We your prayers as guardian claim,
From the world of shades we come.

When death knocks, all shrink with fear,
Trembling as his step they hear:
When his hand prepares the tomb
Who shall dare to say for whom?—

But ye need not start in dread,
Though ye hear us at your door:
For our steps by Heaven are led;
If ye sleep, oh! sleep no more!

Wake, good Christians, wake and rise,
All awake, both great and small,
In your breast if pity lies
Listen to our piteous call.
In the name of God we say,
Rise to help us—rise and pray!
Brothers, friends, and parents dear,
We are lost unless you hear!

Those we cherished long ago
Cease our absence to deplore;
Those we loved forgot us now,
And our place is mis'd no more!
Children! soft your beds are made,
We, your parents, know no rest;
Calm and warm while you are laid
We are toad in flames unblessed!
Pride and wealth the world may awe,
What are they, when all is past,
But five planks, a heap of straw,
And a winding sheet at last.
With some clay upon us thrown,
These, alas! are ours alone!

And our souls!—what pains they know
Fire above us and around,
O'er our heads, our feet below,
By our sins in anguish bound.
Once we had a host of friends,
Now no joy on us attends—
We are dead and all forgot,
And our kindred know us not:
Can ye bear to see us thus!
Pray for us! oh, pray for us!"

The next is a poem of another sort, for there is no want of comic feeling amongst the Bretons, though the general character of their compositions is mournful.

The millers and tailors in Brittany are always sworn enemies; they are *rival poets*, and make their poetical gifts a vehicle to convey their adverse sentiments; a war of wit is constantly going on between them. The following ballad is one of the oldest known; it dates about 1420.

Pontaro is a charming rural retreat half lost in a bower of alders and willows at the bottom of a valley in the confines of the parish of Bannalek, in Basse-Cornouaille:—

The Miller of Pontaro.

At Bannalek is a Pardon* gay,
Chorus. And my mill turns round!
Diga, diga, da!
But there they steal young maids away,
Chorus. And my corn is ground,
Diga, diga, da!

There may be seen young gallants brave,
On horses richly dight;
Feathers in their bonnets wave,
The maidens to delight.

The little hunchback, Guilla-wick,
Is in sore trouble and pain,
For he has lost his pretty Fantik,
And seeks for her in vain!

"Oh, little tailor, be of cheer,
She is not lost, your Fantik dear,
With the young Baron I saw her go,
Down to the Mill of Pontaro."

* Religious festival.

Guita-wick:

"Oh miller, miller, dost thou hear?
Bring me back my Fantik dear."

Miller:

"I saw but once your pretty Fanchon
To the Baron's mill repair,
And there she stood near the bridge alone,
With a rose in her bosom fair:
Her coil was white as the snow on the lea,
And that coil was not given to her by thee."

A velvet bodice of black she wore,
Trimm'd with silver, bright and new,
And her soft round arm a basket bore,
Fill'd with fruit of golden hue.
And there were flow'rs the fruit between,
Fine flow'rs, good tailor, they were I ween.

They came from the manor garden gay;
And she caroll'd blithe as a bird in May,
As she looked in the river her face to see,
And, sooth, it was fair as face might be.

The words she sung—I hear them still—
"Would I were the Miller's wife so free!
Would I were the mistress of yonder mill,
The young Baron's mill is the home for me!"

Guita-wick:

"Oh, miller, miller, mock no more,
But my pretty Fantik straight restore!"

Miller:

"Five hundred crowns if to me you paid,
You should not have the beauteous maid:
You should not have your Fanchon gay,
For she at the Baron's mill shall stay:
My ring on her finger I placed to-day!
The Baron of Hevin has pass'd his word,
And he is a brave and a loyal lord."

Oh, the miller's men they sing so clear,
And they whistle merrily,
— "Good cakes and butter are hearty cheer,
When the board is fill'd so high.
Oh, butter is plenty and many a cake:
And we, from each sack, a morsel may take.
And the pretty maidens dance so gay
On the gallant miller's wedding-day."

In 1838, M. de la Villemarqué was commissioned by the Minister of Public Instruction in France to visit Wales on the occasion of the grand fête given by the ancient Britons to their brethren of Armorica. He attended the Eistedvod (or, as he spells the word, *Eisteved*, deceived by the difficulty to a foreigner of pronouncing the Welsh *d* like *th*), and gives an animated description of that interesting meeting, which in these common-place days stands apart as a well-preserved relic of early times in all its freshness and truth. Sir Charles Morgan Ivor ab (it should be *ap*) Ivor, presided, and the enthusiastic meeting of the bards of two nations, of common origin but long separated, is recounted in glowing terms, and a vivid picture given of the delight which the Welsh experienced when they found they were able to comprehend the song poured forth in the ancient language of Armorica by the author. Instead of the *Stone of Remembrance*, which it was the custom of the ancient British to erect on the spot where they had held their grand synods of fraternity and union; it was agreed between the patriotic lady, whose labours have already been given to the public, and her Breton associate, that the publication of the ancient stories of the country, both in France and England, should be the appropriate memorial of the pleasing occasion.

The work opens with an essay on the origin of the Chivalric Epics of the Round Table. M. de la Villemarqué observes:—

"The Epic poetry of France in the Middle Ages had three themes, the Ancients, the French, and the Bretons. They knew no other, and proclaim that fact in the words of Guiteclin de Saissoigne:—

*No sont que trois matières à nul homme entendant;
De France, de Bretagne, et de Rome la grand.*

Alexander, Charlemagne, and Arthur are their three heroes. The origin of the two first has been agreed upon; but on that of the last, learned men of all countries have disputed, and it yet remains uncertain whether the romances of Arthur are traditions, drawn from the recollections of the people, or whether they are pure fictions."

To facilitate this decision, M. de la Villemarqué has endeavoured to simplify the question as much as possible, and places his histories in classes: the result of his labours he conceives will be the general acknowledgment that the whole of the Epics of the Round Table, French and foreign, had their source in the traditional legends of Brittany. Whether his arguments are convincing or not, his work is not

* This alludes to the privilege possessed by the millers of taking a portion of the corn given them to grind.

the less agreeable, his learning not the less acceptable, and his enthusiasm not the less infectious.

We give a curious passage, hitherto unknown, respecting that frail and haughty beauty, Queen Gwennivar, or Genievre, whom "all bards agree in describing as proud in her childhood, and prouder still in mature age. A poet of the tenth century has preserved a contention between her and her husband in a remarkable dialogue, in which the Queen takes upon herself to rally and contradict her lord at every word."

The great hero, it must be confessed, appears in the character of a boaster on the occasion, and it was, probably, to repress his vanity that his lady exerted her powers of derision.

"Arthur. My horse is black, and he bears me well; he shrinks not at the water, and he flies before no man.

"Gwennivar. My horse is gray, of the colour of the leaf. May the braggart be eternally despised! his discourse charms himself alone. Who is he that rides where he lists, and advances at the head of armies? A warrior whom none can conquer: Kay the tall, son of Seuni.

"Arthur. I ride where and when I please, and urge on my courser by the shore when the tide is rising: it would give me but little trouble to vanquish Kay.

"Gwennivar. Hold, young man, it is strange that you should speak in such a manner: unless you are better than you seem, you could not vanquish Kay, even with the aid of a hundred warriors like yourself.

"Arthur. Gwennivar of the charming countenance, do not despise me: although I am little, I will conquer a hundred warriors with my single hand.

"Gwennivar. Young man of the blackened habit, when I look attentively on your features, it appears to me as if I had seen you before somewhere.

"Arthur. Gwennivar, of the soft sweet eyes, tell me, if you know, where you have seen me.

"Gwennivar. I have seen in the country of Dinant, a man of middle size, seated at a table, called by his name, Arthur's Table, distributing wine to his assembled companions.

"Arthur. Gwennivar, of the charming word, the lips of woman, through rillery, disclose the truth: it is so; you saw me there for the first time."

The romance of Owenn, or the Lady of the Fountain, is full of the wild imagination of its period; and, whether of Breton or Welsh origin, is a specimen worthy of admiration. The manners of the age of King Arthur are quaintly set forth in the first part. The party is assembled at Caerleon, once the capital of the country of the Silures, now Monmouthshire, a pretty little village, where the peasants still point out with pride the remains of a Roman amphitheatre, called by them "King Arthur's Round Table:" some remains still exist of antique walls of ten feet thick, but perhaps the most pleasing piece of antiquity is to be observed in the custom of strewing roses on the graves of friends, an observance similar to that in Brittany at the present day.

"The Emperor Arthur was at Kerlcon, on the Osk.

"Now, one day he was seated in his chamber, and with him were Owenn, son of Urien, and Kenon, son of Kledno, and Kay, son of Kener, and Gwennivar and her women, working with the needle near the window.

"And it could not be said that there was a porter at the palace of Arthur, for there was none. Glewlwyd, the warrior of the large hand, held the office; it was he who introduced guests and strangers, who received them with honour, informed them of the usages and customs of the court, and ushered in whoever desired to be admitted to the saloon or the chamber, and whoever asked hospitality.

"Now the Emperor Arthur was seated in the middle of the room, in an arm chair of green rushes on a carpet of yellow cloth, and he leant on a cushion of red satin, and he said—

"If you will not mock me, lords, I shall take a nap until the hour of repast, and you can relate stories, and let Kay serve you with a jug of hydromel and some meat."

"And the Emperor went to sleep.

"And Kenon, son of Kledno, asked Kay for that which Arthur had promised. I would rather first,

* As Arthur alludes to the Severn, whose waves rising are dangerous, the font is greater than, at first, it appears.

said Kay (who is of a remarkably sharp sarcastic turn), hear some of those fine stories which he has announced. Begin by obeying the orders of Arthur, replied Kenon, and you shall hear afterwards one of the finest histories that we know. Kay then repaid to the kitchen and the cellar, and returned with a jug of hydromel, and a golden cup, and a handful of little spits of roast meat, (*kabobs*, apparently).

"They began to eat the meat and drink the hydromel.

"Now, said Kay, relate me a story. Kenon, said Owenn, relate a story to Kay.

"You are older than I, replied Kenon; you tell stories better than I do, and have seen more extraordinary things; pray relate one yourself to Kay.

"Come, begin, returned Owenn, and tell us the most marvellous you can recollect.

"Well, I begin then, said Kenon.

Story.

"My mother and father had no child but me, and I was full of ambition and boldness. I thought there was nothing in the world above my strength; and, having accomplished all the difficulties that offered in my own country, I made my preparations, and departed for desert countries and distant lands. After having wandered about for some time, I arrived at the most beautiful valley in the world, filled with trees, all of the same height, through which flowed a river, bordered by a pathway. I followed this pathway till mid-day, and I was still following it, when evening fell, and then I entered a wide plain, at the extremity of which was a handsome castle, surrounded by a moat. There I saw two youths, with fair hair floating in the breeze, each of whom had a cap, ornamented with gold, and was dressed in a tunic of yellow satin, their sandals were fastened on their feet by a golden buckle, and they held in their hands ivory bows, the cords of which were of the nerves of the deer. Their arrows were of whalebone, adorned with peacocks' feathers, and gilt at the ends; and they had daggers, with golden ornaments, and the handles of whalebone, which they amused themselves by throwing. Near them stood a man, with flowing fair hair, in the prime of life, whose beard was newly shaven, and who was dressed in a tunic and mantle of yellow satin trimmed with gold fringe; his feet were covered with shoes of different coloured leather, fastened by two golden bosses. As soon as I saw him, I advanced and saluted him; but he was so polite, that he was beforehand with me, and conducted me to the castle.

"Now there was but one saloon occupied, and in this were twenty-four young girls, who were embroidering satin in the recess of the window; and I assure you, Kay, that the plainest of these was handsomer than the most beautiful damsel you have ever seen in the island of Britain, and the least graceful was more graceful than Gwennivar, the wife of Arthur, when she appears ornamented with all her charms at mass, at Christmas or Easter.

"They rose at my approach: six of them took my horse, and disarmed me; six others took my armour, and cleansed it in a basin, until it was perfectly bright; and six others placed a napkin on a table, and prepared a repast; the six last took away my soiled habiliments, and gave me others—that is to say, a shirt and drawers of fine cloth, a tunic, a jacket (cotte), and a mantle of yellow satin trimmed with a broad gold fringe: they then brought large round carpets, and cushions covered with fine red cloth, which they spread round and beneath me, and I seated myself.

"Then the six damsels who had taken my horse, unharnessed him as readily as if they had been the best squires of the island of Britain; after which they brought silver ewers to wash in, and napkins of cloth, some green and some white, and I washed.

"Presently my host seated himself at table, with me by his side, and all the women round me, except those who waited on us. The table was of silver, and the cover of linen cloth, and not one of the dishes on the table but was of gold, silver, or buffalo's horn (!) The dinner came, and of a truth, Kay, I saw there no sort of meat or liquor I had ever beheld before, but nowhere in my life did I behold a service better arranged.

"Till towards the middle of the repast, neither my host nor any of the damsels addressed a word to me; and when my host perceived that it would be more agreeable to me to talk than to eat, he demanded of

me who I was. I expressed to him my pleasure at having some one to speak to, and to find that it was not forbidden to speak in his castle. 'My lord,' said he, 'we should sooner have addressed you, had we not feared to interrupt your repast; but now, let us converse.'

'I then informed him who I was, and the object of my journey, which I told him was to discover if any one could conquer me, or if I was destined to overthrow everybody. My host looked at me, and smiled, while he said:—'If I did not fear to injure you, I could guide you to the person you seek.'

'These words agitated me so much, that he continued:—'If you prefer annoyance to amusement, you may be satisfied. You have but to sleep here to-night, and to rise early to-morrow morning, and take the road above the valley till you come to the wood from which you came here; a little way in the wood you will find a path to the right, follow this till you reach a large shady glade, in the midst of which rises a hill, where, on the summit, you will perceive a tall black man, double the height of other men: he has only one foot, and one eye in the centre of his forehead. He is not handsome; on the contrary, he is remarkably ugly. He bears an iron club, which no two ordinary men could lift. He is the guardian of the wood; you will see a thousand wild beasts feeding by his side: ask him the way out of the glade, and he will teach you the road to what you seek.'

'The night seemed very long to me, and by day-break I rose and dressed myself. I straightway mounted my horse, and set out, nor did I stop till I had reached the glade he named. When I arrived there, I was amazed at the sight of the wild beasts, for there were three times as many as my host had spoken of. The black man was seated on the top of the hill, but he appeared to me much taller than I had imagined, and his club, which it was represented to me that two men could not lift, was certainly, Kay, more than enough for four, and he held it in his hand. I asked of him what power he had over those beasts.

'*"I will show you, little man,"* said he. He then took his mace and gave a violent blow to a stag, who burst out braying with a loud voice. Immediately as great a crowd of animals as there are stars in the sky collected together, so that I could hardly find room in the glade amongst them: there were there serpents, and dragons, and all sorts of reptiles. He looked at them, and then ordered them to go and graze; they accordingly bent their heads, and did him homage, as vassals to their sovereign.

'*"You see, little man,"* said he, 'what is my power over these animals.'

'I asked him my way, to which he replied, rudely, by inquiring my business; I told him, and he replied:

'*"Take the road at the end of the glade, and climb that wooded hill to the top where you will find an open space, a kind of long valley, in the midst of which is a great tree whose branches are greener than the greenest fir, and near this is a fountain whose borders are marble, where, attached to a chain of silver is a silver basin, so chained that it may not be carried away. Take the basin, fill it with water and pour it on the brink of the fountain, you will then hear a loud clap of thunder as if earth and heaven trembled with fury: such a storm of rain will follow this, that you will hardly be able to support it, hail will be mingled with the rain: after the storm the weather will clear; but there will not be a single leaf of the tree which is not swept away. A flight of birds will then descend upon the tree: never in your country have you heard anything comparable to their singing. While you are taking pleasure in listening to them, you will hear a great noise and lamentation in the valley; and a knight will appear mounted on a palfrey as black as jet, bearing on the point of his lance a banelore of cloth of the colour of jet: he will lose no time in attacking you. If you turn and fly he will overtake you: if you attend his coming, as sure as you are on horseback, he will bring you to your feet. Believe me, if you come forth safe and sound from this adventure you need not seek another."*

With the usual repetition of romance, the son of Kledno goes on with his Munchausen story, and recounts that he found all as described by the black giant, and while he listened to the singing of the birds, which he assures Sir Kay were far superior to any he

had ever heard—a practice rather common with travellers—a plaintive voice utters these words:—

'Sir Knight, what brings you here? What harm have I done you that, you should act thus towards me and my property? Know you not that the storm has left alive, in my domains, neither man nor beast that it has surprised?'

Whereupon the jet black knight makes his appearance, attacks the hero who was so anxious for adventures in a furious manner, overturns him in a moment, seizes his horse and carries it away with him, leaving the young braggart with the utmost contempt to find the best of his way back to the gentleman in yellow satin and the young ladies.

He gets terribly quizzed by the black giant of the Hill on his way, but the courtesy of those at the castle is so great, that they make no allusion to his misfortune, nor does he mention it himself.

When he rises next day, he is presented with a dark bay palfrey whose nostrils were as red as scarlet, and having thanked and taken leave of his polite hosts, Kenon returns homeward. 'The horse,' says he, 'of which I have spoken, is still in my stables, and certes, Kay, I would not exchange him for the best in the Island of Britain.'

'God knows if ever man related an adventure so little honourable to him, but in truth that which astonishes me is never to have heard any one speak of it, neither before or after, and that the marvellous fountain exists in the dominions of the Emperor Arthur without its being visited.'

This wonderful story excites Owenn to attempt the adventure: he accordingly does so, meets the same persons and encounters the jet black knight, but comes off conqueror, is assisted by a waiting damsel, always an important personage in these histories, and concludes by marrying the disconsolate widow of the jet black knight, the lady finding, after mature deliberation, that her Fountain could not otherwise be defended, as she was in want of horses, arms, and soldiers. Bishops and archbishops came to celebrate the wedding, and the inhabitants of the province rendered homage to Owenn.

He defended the Fountain with lance and sword. Now this is how he defended it: whatever knight presented himself he overcame him, and obliged him to pay a ransom more or less great according to the merit of the aggressor; he divided the spoil with his barons and knights, so that there was not a knight in the world so much loved by his vassals. And this lasted for three years.'

Our limits will scarcely allow of our giving the remainder of the romance, but we hope to return to these curious volumes as soon as we can find space to do so.

History of Scotland. By P. F. Tytler, Esq. Vlo. VIII. [Second Notice.]

The general features of Babington's plot are well known. Savage, a fanatic, had solemnly sworn to assassinate Elizabeth; and Ballard, a priest, repaired to England to obtain aid of the Catholic gentry, and he communicated this design to Anthony Babington, as violent a fanatic as Savage, though of superior rank. As the plot of Throckmorton, to which Mary was an evident party, and the subsequent one of Parry, which 'included an attempt against the life of the English Queen,' had both been discovered and defeated, and as the threats of Elizabeth's assassination had aroused the feelings of her subjects to the highest enthusiasm, the exertions of the conspirators in this third and last plot, were the more earnest and decided:—

'On being sought out by Ballard, Babington evinced all his former eagerness for the service of the captive Queen; but expressed strongly the same opinion as that already given by Charles Paget, that no invasion or rising in England could succeed as long as Elizabeth lived. Ballard then communicated to him Savage's purpose of assassination; adding, that the gentleman who had solemnly bound himself to despatch that Princess was now in England. This revelation produced an immediate effect; and Babington expressed a decided opinion that the simultaneous execution of both plots held out the fairest prospect of success. It would be dangerous, however,

he said, to intrust the assassination to only one hand: it might fail, and all would be lost. He suggested, therefore, an improvement, by which the murder should be committed by six gentlemen of his acquaintance, of whom Savage should be one; whilst he pointed out the best havens where foreign troops might be landed; summed up the probable native force with which they were likely to be joined; and demonstrated the surest plan for the escape of the Scottish Queen. With all this Ballard was highly pleased; and from the time when the first meeting with Babington took place, he and Babington employed themselves in discovering amongst their acquaintance, such men as they deemed likely to engage in this abominable design. Three were soon procured to join with Savage. Their names were Abingdon, the son of the late cofferer of the Queen's household; Barnwell, who was connected with a noble family in Ireland; and Charnock, a Catholic gentleman in Lancashire. Some time after, the number of six was made up by the addition of Charles Tilney, one of the Queen's band of gentleman pensioners, and Chidoock Titchbourne. Other gentlemen of their acquaintance were engaged to assist in the project for the invasion, and the escape of Mary, but the darker purpose of assassination was not revealed to them.'

Mr. Tytler labours hard to prove, that although Mary was acquainted with the project of the invasion, she was ignorant of that of the assassination. That she well knew it,—and knew it from the first,—is, we think, proved even more from indirect allusions in her letters and those of Morgan, than from the direct allusion in her letter to Babington. James has often been censured for the indifference with which he viewed his mother's fate; but from the following letter, addressed by Mary to Charles Paget, we think he may be well exonerated from censure. We give a portion from the copy in the State Paper Office:—

'I have thought good that you enter with the Ambassador of Spain, in these countries following: to wit, that I shall travel by all means to make my son enter in the said enterprise; and if he cannot be persuaded thereunto, that I shall dress a secret strait league among the principal Catholic lords of that country, and their adherents, to be joined with the King of Spain, and to execute, at his devotion, what of their parts shall be thought meet for advancing of the said enterprise; so being they may have such succours of men and money as they will ask; which, I am sure, shall not be very chargeable, having men enough within the country, and little money stretching far and doing much there. Moreover, (continued Mary,) I shall dress the means to make my son be delivered in the hands of the said King of Spain, or in the Pope's, as best by them shall be thought good; but with paction and promise to set him at liberty whensoever I shall so desire, or that, after my death, being Catholic, he shall desire again to repair to this Isle. * * * This is the best hostage that I and the said lords of Scotland can give to the King of Spain for performance of that which may depend on them in the said enterprise. But withal must there be a Regent established in Scotland, that [may] have commission and power of me and my son, whom it shall be easy to make pass the same, he being once in the hands of the said lords, to govern the country in his absence; for which office I find none so fit as the Lord Claud Hamilton, as well for the rank of his house as for his manhood and wisdom; and to shun all jealousy of the rest, and to strengthen him the more, he must have a Council appointed him of the principal lords, without whom he shall be bound not to ordain anything of importance. I should think myself most obliged to the King of Spain, that it would please him to receive my son, to make him be instructed and reduced to the Catholic religion, which is the thing in the world I most desire; affecting a great deal rather the salvation of his soul than to see him monarch of all Europe; and I fear much, that so long as he shall remain where he is, (amongst those that found all his greatness upon the maintenance of the religion which he professeth,) it shall never be in my power to bring him in again to the right way; whereby there shall remain in my heart a thousand regrets and apprehensions, if I should die,

* The reader cannot fail to be struck with the Orientalism throughout this narrative.

to leave behind me a tyrant and persecutor of the Catholic Church."

Now it was no infant or mere child that Mary thus determines to deliver up to those whom he had always considered as his chief enemies, but a young man within only a few weeks of completing his twentieth year; one who had been recognized as king from his cradle, and who had already exercised an independent sovereignty for two or three years. "All this time," continues Mr. Tytler, "Mary had no communication with Ballard," and on this assumption he grounds his belief that she was ignorant of the projected assassination. But in all cases like this, not only should the character of the age be taken into account, but the character of the individual. The age, as we have seen, was emphatically an age of assassination; and when we look at Mary's past life, and see how the young woman, scarcely more than twenty, signed the "League" sent by Cardinal Lorraine, and thus, to use the very words of Mr. Tytler in his former volume, "united herself to a bigoted and unprincipled association, which, under the mask of defending the truth, offered an outrage to the plainest principles of the gospel;" when, too, we bear in mind the faint refusal she gave to the almost direct hint of her husband Darnley's assassination, and how suspiciously she was implicated in that act,—is it unlikely that the woman who had endured nineteen years' captivity should yield assent to the project, which bade so fairly not only to restore her to freedom, but place a double crown on her brow, even although that project was murder? The following extract from Morgan's letter seems to us to prove that Mary was acquainted with Ballard's plan, and that the reason of her having no direct communication with him was simply the danger of discovery:—

"He (Ballard) followeth (said he) some matters of consequence, the issue whereof is uncertain; wherefore, as long as these labours of his and matters do continue, it is not for your Majesty's service to hold any intelligence with him at all, lest he, or his partners, be discovered, and they, by pains or other accidents, discover your Majesty afterwards to have had intelligence with them, which I would not should fall out for any good in the world. And I have specially warned the said Ballard (he continued) not to deal at any hand with your Majesty, as long as he followeth the affairs that he and others have in hand, which tend to do good, which I pray God may come to pass; and so shall your Majesty be relieved by the power of God."

The following postscript speaks even more plainly:—

"In a postscript of a letter of Morgan's to Curle, Mary's French secretary, written on the same, which was intercepted and deciphered by Philipps, an indirect allusion was made to these practices of Ballard against the life of Elizabeth. 'I am not unoccupied (said he) although I be in prison, to think of her Majesty's state, and yours that endure with her, to your honours; and there be many means in hand to remove the beast that troubleth all the world.'"

The circumstance of the letters produced, both on the trial of Ballard and Babington, and of Mary, being only copies, is strongly dwelt upon by Mr. Tytler. This, however, must always be the case when the correspondence is carried on in cipher, and, for the like reason, a court ever so anxious to do full justice to the prisoner, must depend upon the honesty of the decipherers. Such men, in such times, have not always that respect for truth which would place them above suspicion; and Philipps seems to have been as unscrupulous an agent as any minister of the sixteenth century could desire. Still we cannot see that he was at all worse than the known and approved agents of Mary. Babington himself offered his services to Walsingham, at the very moment that he came to London to arrange the plan for Elizabeth's

assassination, as a spy upon the practices of the Roman Catholic party! Walsingham, too wary to be thus deceived, accepted his offers and turned them to his own account.

The original drafts of most of Mary's letters, and those of her secretaries Nau and Curle, together with those of Morgan and Gifford, have been preserved, and generally with the decipher; in regard to these, therefore, the honesty and the accuracy of Philipps may be still ascertained. But the letter in which she enters at large into her plan of escape exists only in a copy by Philipps. It appears, however, to us so evident that Mary was acquainted with the whole plot, that this letter, although perhaps necessary to afford the direct legal proof, is of little consequence so far as regards the historical. When upon the seizure of the conspirators, Mary's two secretaries were examined, "their confessions did not materially involve their mistress." The evidence connecting her with "a general conspiracy for the invasion of the realm," was, however, perfectly clear; and we must bear in mind that this alone was high treason. We do not see therefore why Philipps (although we allow him to have been capable of it) should have taken the gratuitous trouble of forging either letter or postscript. On a subsequent examination of Nau, he declared that the Queen always had her important letters "written in her cabinet by him or Curle. She dictated, he took them down, read them over to her, drew out the letters, again submitted them for correction, and finally delivered them to be put into cipher, and disposed of according to her orders." Now, according to this, it was scarcely possible that Mary's agents could be carrying on another and deeper plot, with which she was unacquainted. "In this manner," he proceeds, "were written the intercepted letters to the Archbishop of Glasgow, Charles Paget, and the Spanish ambassador; but as to the letter of Babington (the one in question), she had delivered it to him, written for the most part in her own hand." Notwithstanding this, he still affirmed that his mistress was ignorant of the assassination. The question as respects this letter is certainly one of great difficulty, but respecting Mary's knowledge of the whole plot there can be little doubt. We must pass over subsequent events, merely remarking that the conduct of Elizabeth in refusing to sign the warrant for Mary's death, has always appeared to us discreditable—she over-acted her part, and as such it failed of its effect. If Mary was really a criminal, why was not the signature affixed to her death warrant, as in the case of any other criminal? If Elizabeth really deemed the penalty of death too severe, why not pardon and still detain her in prison?

Whatever view we may take of Mary's conduct up to the time of her condemnation, from that time she becomes an object of deep interest; and emphatically may it be said of her, "nothing in her life became her like the leaving it." We give a few extracts from Mr. Tytler's account of the last scene, and conclude. On the night before her execution,—

"After supper, she called for her ladies, and asking for a cup of wine, drank to them all, begging them to pledge her, which they did on their knees, mingling their tears in the cup, and asking her forgiveness if they had ever offended her. This she readily gave them, bidding them farewell with much tenderness, entreating in her turn their pardon, and solemnly enjoining them to continue firm in their religion, and forget all their little jealousies, living in peace and love with each other. It would be easier to do so now, she added, since Nau, who had been so busy in creating dissensions, was no longer with them. This was the only subject on which she felt and expressed herself with something like keenness; repeating more than once, that he was the

cause of her death, but adding that she forgave him. She next examined her wardrobe, and selected various dresses as presents to her servants, delivering them at the moment with some kind expression to each. She then wrote to her almoner, lamenting that the cruelty of her enemies had refused her the consolation of his presence with her in her last moments, imploring him to watch and pray with her that night, and to send her his absolution. After this she made her will; and lastly, wrote to the king of France. By this time it was two in the morning, and finding herself fatigued, she lay down, having first washed her feet, whilst her women watched and read at her bedside. They observed that, though quite still and tranquil, she was not asleep, her lips moving, as if engaged in secret prayer. It was her custom to have her women read to her at night a portion of the 'Lives of the Saints,' a book she loved much; and this last night she would not omit it, but made Jane Kennedy choose a portion for their usual devotions. She selected the life entitled, 'The Good Thief,' which treats of that beautiful and affecting example of dying faith and divine compassion. 'Alas!' said Mary, 'he was indeed a very great sinner, but not so great as I am. May my Saviour, in memory of His Passion, have mercy on me, as he had on him, at the hour of death.' At this moment she recollected that she would require a handkerchief to bind her eyes at her execution; and bidding them bring her several, she selected one of the finest, which was embroidered with gold, laying it carefully aside. Early in the morning she rose, observing that now she had but two hours to live; and having finished her toilet she came into her oratory, and kneeling with her women before the altar, where they usually said mass, continued long in prayer. Her physician then, afraid of her being exhausted, begged her to take a little bread and wine; which she did cheerfully, thanking him, at the same time, for giving her her last meal."

On her proceeding to the hall, her servants were cruelly prohibited from following her:—

"This stern and unnecessary order was received by them with loud remonstrances and tears; but Mary only observed, that it was hard not to suffer her poor servants to be present at her death. She then took the crucifix in her hand, and bade them affectionately adieu: whilst they clung in tears to her robe, kissed her hand, and were with difficulty torn from her, and locked up in the apartment. The Queen after this proceeded alone down the great staircase, at the foot of which she was received by the Earls of Shrewsbury and Kent, who were struck with the perfect tranquillity and unaffected grace with which she met them. She was dressed in black satin, matronly, but richly; and with more studied care than she was commonly accustomed to bestow. She wore a long veil of white crape, and her usual high Italian ruff; an Agnus Dei was suspended by a pomander chain round her neck, and her beads of gold hung at her girdle. At the bottom of the staircase she found Sir Andrew Melvil, her old affectionate servant, and Master of her Household, waiting to take his last farewell. On seeing her he flung himself on his knees at her feet, and bitterly lamented it should have fallen on him to carry to Scotland the heart-rending news of his dear mistress' death. 'Weep not, my good Melvil,' said she, 'but rather rejoice that an end has at last come to the sorrows of Mary Stuart. And carry this news with thee, that I die firm in my religion, true to Scotland, true to France.'"

Her request for the attendance of her servants was again renewed. This, after some consultation, was granted.

"Followed by them, and by Melvil bearing her train, she entered the great hall, and walked to the scaffold, which had been erected at its upper end. It was a raised platform, about two feet in height, and twelve broad, surrounded by a rail, and covered with black. Upon it were placed a low chair and cushion, two other seats, and the block. The Queen regarded it without the least change of countenance, cheerfully mounted the steps, and sat down with the same easy grace and dignity with which she would have occupied her throne. On her right were seated the Earls of Kent and Shrewsbury, on her left the Sheriffs, and before her the two executioners. The

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Earl of Kent, the Dean of Peterborough, Sir Amias Paulet, Sir Drew Drewry, Beal the Clerk of the Privy-council, and others, stood beside the scaffold; and these, with the guards, officers, attendants, and some of the neighbouring gentry, who had been permitted to be present, made up an assembly of about two hundred in all. Beal then read the warrant for her death, which she heard with apparent attention; but those near her could see, by the sweet and absent expression of her countenance, that her thoughts were far off. When it was finished, she crossed herself, and addressed a few words to the persons round the scaffold. She spoke of her rights as a Sovereign Princess, which had been invaded and trampled on, and of her long sorrows and imprisonment; but expressed the deepest thankfulness to God, that, being now about to die for her religion, she was permitted, before this company, to testify that she died a Catholic, and innocent of having invented any plot, or consented to any practices against the Queen's life. 'I will here,' said she, 'in my last moments, accuse no one; but when I am gone, much will be discovered that is now hid, and the objects of those who have procured my death be more clearly disclosed to the world.' * * The Dean of Peterborough then prayed in English, being joined by the noblemen and gentlemen who were present; whilst Mary, kneeling apart, repeated portions of the Penitential Psalms in Latin, and afterwards continued her prayers aloud in English. By this time, the Dean having concluded, there was a deep silence, so that every word was heard. Amid this stillness, she recommended to God his afflicted Church, her son, the King of Scotland, and Queen Elizabeth. She declared that her whole hope rested on her Saviour; and, although she confessed that she was a great sinner, she humbly trusted that the blood of that immaculate lamb, which had been shed for all sinners, would wash all her guilt away. She then invoked the blessed Virgin and all the saints, imploring them to grant her their prayers with God; and finally declared that she forgave all her enemies. It was impossible for any one to behold her at this moment without being deeply affected; on her knees, her hands clasped together and raised to Heaven, an expression of adoration and divine serenity lighting up her features, and upon her lips the words of forgiveness to her persecutors. As she finished her devotions she kissed the crucifix, and, making the sign of the cross, exclaimed in a clear, sweet voice, 'As thine arms, O my God, were spread out upon the cross, so receive me within the arms of thy mercy: extend thy pity, and forgive my sins!' She then cheerfully suffered herself to be undressed by her two women, Jane Kennedy and Elizabeth Carle, and gently admonished them not to distress her by their tears and lamentations; putting her finger on her lips, and bidding them remember that she had promised for them. On seeing the executioner come up to offer his assistance, she smiled, and playfully said she had neither been used to such grooms of the chamber, nor to undress before so many people. When all was ready she kissed her two women, and, giving them her last blessing, desired them to leave her, one of them having first bound her eyes with the handkerchief which she had chosen for the purpose. She then sat down, and, clasping her hands together, held her neck firm and erect, expecting that she was to be beheaded in the French fashion, with a sword, and in a sitting attitude. Those who were present, and knew nothing of this misconception, wondered at this; and in the pause, Mary, still waiting for the blow, repeated the psalm, 'In thee, O Lord, have I trusted: let me never be put to confusion.' On being made aware of her mistake she instantly knelt down, and, groping with her hands for the block, laid her neck upon it without the slightest mark of trembling or hesitation. Her last words were, 'Into thy hands I commend my spirit, for Thou hast redeemed me, O Lord God of truth.' At this moment the tears and emotions of the spectators had reached their height, and appear, unfortunately, to have shaken the nerves and disturbed the aim of the executioner, so that his first blow was ill directed, and only wounded his victim. She lay, however, perfectly still, and the next stroke severed the head from the body. The executioner then held the head up and called aloud, 'God save the Queen!' 'So let all Queen Elizabeth's enemies perish!' was the prayer of the Dean of Peterborough; but the spectators were dissolved

in tears, and one deep voice only answered, Amen. It came from the Earl of Kent. An affecting incident now occurred. On removing the dead body, and the clothes and mantle which lay beside it, Mary's favourite little dog, which had followed its mistress to the scaffold unperceived, was found nestling under them. No entreaty could prevail on it to quit the spot; and it remained lying beside the corpse, and stained in the blood, till forcibly carried away by the attendants."

Poems from Eastern Sources. By R. C. Trench. Moxon.

WE have reached the extreme, it is to be hoped, of that counter-movement which succeeded, and was sure to succeed, the "hubble bubble" storm and passion of Byron and the Byronists. It is now all quietism with our poets. The heavenly maid no longer startles us with flaming eyes, dishevelled locks, and lips quivering with passion; she is the "goddess sage and holy," and stands statue-like, and "breathless with adoration."

No one who has been a reader of this Journal for a single twelvemonth, can doubt what are our views and feelings in relation to Art. But the very earnestness with which we have endeavoured to exalt the spiritual over the sensual, alike in Poetry, Painting, Sculpture, and Music, justifies, and indeed especially requires from us, remonstrance against the substitution of shadows for realities. These poems of Mr. Trench's are unreal mockeries; his men and women, their hopes and passions, but colourless forms; they belong to a past age, past feelings, past sympathies. We live in an active, not a contemplative age; we have no "studious cloisters pale" in which to dream away a life; and to exhibit men without reference to the changes which Time has wrought upon life and opinions, is the amusement of a masquerader rather than the dignified and worthy employment of a poet, and can have no influence—either for good or ill. Hence it is that much which passes current as meditative and religious verse, is of less value in our eyes than the pleasant songs of Fairyland to which our cradles were rocked.

It has been impossible to escape from considerations like these while pondering over Mr. Trench's new volume. The love for the calm, the contemplative, and the passionless, has led him so far, that while most of its pages are to be approved by the head, few, it may be predicated, will be transferred to "the red-leaved tablets of the heart." His thoughts take the form of aphorisms—his images are left in outline—his pictures are painted upon glass or ice—their forms are cold, bloodless, and transparent. The following is as fair a specimen of Mr. Trench's narrative powers as occurs to us: let our readers decide whether our remarks are justified:—

The Falcon's Reward.

Beneath the fiery cope of middle day

The youthful Prince, his train left all behind
With eager ken gazed round him every way,
If springing well he anywhere might find.

His favourite falcon, from long airy flight

Returning, and from quarry struck at last,
Told of the chase, which with its keen delight
Had thus allured him on so far and fast,—

Till gladly he had welcomed in his drought

The duldest pool that gathered in the rain—
But such, or fount of clearer wave, he sought
Long through that land of barrenness in vain.

What pleasure when, slow stealing o'er a rock,

He spied the glittering of a little rill.
Which yet, as if his burning thirst to mock,
Did its rare treasures drop by drop distil.

A golden goblet from his saddle-bow

He loosed, and from his steed alighted down,
To wait until that fountain, trickling slow,
Should in the end his golden goblet crown.

When set beside the promise of that draught,

How poor had seemed to him the costliest wine,
That ever with its beaded bubbles laughed,—
When set beside that nectar more divine.

The brimming vessel to his lips at last

He raised, when, lo! the falcon on his hand,
With beak's and pinion's sudden impulse, cast
That cup's rare treasure all upon the sand.

Long was it ere that fountain, pulsing slow,

Caused once again that chalice to run o'er;
When, thinking no like hindrance now to know,
He raised it to his parched lips once more:

Once more, as if to cross his purpose bent,

The watchful bird,—as if on this one thing,
That drink he should not of that stream, intent,—
Struck from his hand the cup with eager wing.

But when this new defeat his purpose found,
Swift penalty this time the bird must pay;
Hurled down with angry force upon the ground,
Before her master's feet in death she lay:

And he, twice baffled, did mean while again
From that scant rill to slake his thirst prepare;
When, down the crags descending, of his train
One cried, "O Monarch, for thy life forbear!"

"Coiled in these waters at their fountain head,
And causing them so feebly to distil,
A poisonous snake of hugest growth lies dead,
And doth with venom all the streamlet fill."

Dropped from his hand the cup;—one look he cast
Upon the faithful bird before his feet,
Whose dying struggles now were almost past,
For whom a better guardian had been meet;

Then homeward rode in silence many a mile:—
But if such thoughts did in his bosom grow,
As did in mine the painfulness beguile
Of that his falcon's end, what man can know?

I said, "Such chalice the world fills up
For us, and bright and without bale they seem—
A sparkling potion in a jewelled cup,
Nor know we drawn from what infected stream."

"Our spirit's thirst they promise to assuage,
And we those cups unto our death had quaffed,
If Heaven did not in dearest love engage
To dash the chalice down, and mar the draught."

"Alas for us, if we that love are vain
With wrath and blind impatience to repay,
Which nothing but our weakness doth restrain,—
As he repaid his faithful bird that day;

"If an indignant eye we lift above,
To lose some sparkling goblet ill content,
Which, but for that keen watchfulness of love,
Swift certain poison through our veins had sent."

In other of Mr. Trench's legends, the dryness of manner here indicated is carried to so extreme a point, as to bear him beyond the confines which separate verse from prose. As Mr. Trench has the root of true poetry within him, and the characteristic we have been denouncing has, probably, been assumed of settled purpose, we would entreat him and all of his school to consider whether our remarks be not based on a right comprehension of the relative bearings of art and society; and whether the laws which ought to regulate the study and the reproduction of ancient models have not a philosophy, to practise which aright, the artist must divest himself of his own egotism, whether it lead him to passion or to quietism.

OUR LIBRARY TABLE.

The Hunterian Oration, delivered at the Royal College of Surgeons, by G. G. Babington.—On a former occasion we expressed no very favourable opinion of such commemorative discourses as the present, on the score of their prevailing utility; and our opinion on the general merits of the case remains unchanged. It is, nevertheless, a property of genius to turn all things to account, and from time to time it fecundates even the barren ceremonial of an annual "oration," by the insinuation of some truth of larger import than the mere matter in hand. The frame of mind in which these discourses are listened to, may not, indeed, be very favourable to the reception of such truths; and in reference to a large portion of the medley auditory, the uttering them may be no better than the scattering of pearls, according to the proverb. Still, if one or two minds only receive the impulse of the speaker, some positive good is effected. Our readers will understand that it is not to the introduction of novel facts, or the promulgation of novel doctrines, we allude: other more fitting occasions are plentifully provided for this purpose. But there are propositions which, from having long maintained an undisputed possession of the public ear, in teaching, passed over with little emphasis,—which entering into the mind without effort, and holding their place without consideration, are liable to be somewhat too lightly regarded when unexpectedly opposed. Arguments which have long ceased to be employed against a doctrine, because of their acknowledged inefficiency, may thus, at the end of years, be revived as novelties; and then, a public possessing no solid reason for the faith within them are at the mercy of the innovator, and are like a reed shaken by every word of doctrine that charlatanism, or a morbid love of notoriety, may bring into notice. Mr. Babington, impressed seemingly with this conviction, has thought the Hunterian Oration a fit opportunity for a brief commentary on the subject, and he has given a special character to his discourse by

an able attempt to point out the presumptuous character of all *a priori* reasonings on nature, which is the revived fashion of the present day, and to recall his auditors into the right path. Presumption, indeed, is the main characteristic of all sectarian philosophy; and sects in philosophy are the creatures of the *a priori* method. The creations of the imagination are the especial idols of man's false worship, and to attack a theory is truly a personal offence to the author: facts, however successfully investigated, break the idol, and render sect impossible. Mr. Babington's second point concerns the known and tried barrenness of the *a priori* method:—"The curse of barrenness has been laid on those sciences, which, to use an expression of Lord Bacon, have been arrogantly sought in the cells of the human mind. They have been prolific only of disputations, but barren of practical results." * * The discoveries of Newton in astronomy and mechanics; of Lavoisier and Davy in chemistry; of Harvey and Hunter in physiology and pathology, are hourly felt in every transaction of life, and every material comfort which surround us. It is on the foundation of the experimental sciences, that the useful arts, the arts which mankind bless, and by which they are blessed, have been reared; while, at the same time, these same sciences have supplied the highest exercise for the human intellect, and the most extensive and sublime views of the administration of the universe." All this applies in the strictest manner to the study of medicine, and is therefore exceedingly well placed in the Hunterian oration; but the inference, as we insist, is far more pervading.

Recollections of the Life of the Rev. A. J. Scott, Lord Nelson's Chaplain.—We learn from these Recollections, that the Rev. A. J. Scott was an accomplished linguist and dancer (loving, so his fond biographer tells us, "to tread the slow flat-footed waltz of Germany in his own drawing-room" when animated by recollections of the past); and the journals and records of his sea-days contain more numerous notices of his translations and his festivities, than of his sermons or his teachings. As Nelson's secretary, he appears to have been indefatigable and affectionate; and his affection, inherited by his biographers, gives a tone to some part of their narrative, on which, if it were our humour, we could preach a lay sermon. With Lord Nelson's death, Mr. Scott's gay and active days seem to have ended: his clerical and meditative ones to have begun. Disappointed of preferment, unworldly in the administration of his finances, he appears to have divided the rest of his life between the discharge of his duties as parish priest, and the enjoyment of an extensive and miscellaneous library. This book will do his memory no harm, but, had our counsel been asked, it would not have been published.

The Biblical Cabinet, Vols. XXXVIII. and XXXIX.—The volumes before us contain Tholuck's Commentary on the Epistle to the Hebrews, which has been received by the Evangelical churches on the Continent, as the best existing exposition of any Scriptural book. Tholuck regards this epistle as the great connecting link between the New and the Old Testament, and strenuously asserts its canonical authority. He discusses with acuteness the disputed question, whether this epistle is properly ascribed to St. Paul, and decides it in the negative by a weight of evidence which appears to be irresistible. Two valuable dissertations are appended to the Commentary, one 'On the use of the Old Testament in the New, and especially in the Epistle to the Hebrews,' the other, 'On the Institution of Sacrifices and Priests, with especial reference to the Sacerdotal Character of the Messiah, and the Evangelical Doctrine of the Atonement.' Tholuck is a critic of equal learning and sagacity; he has made himself intimately acquainted with the earlier Rabbinical writings, and obtained from them very useful elucidation of the forms of expression peculiar to the writers of the New Testament. We could wish that he had entered at greater length into a collateral inquiry, at which he merely glances, the influence of the Alexandrian philosophy on Judaism before the promulgation of Christianity.

History of Christian Missions, by J. A. Huie.—Written in an affectionate Catholic spirit well suited to the subject. The author has honourably exerted himself to procure accurate information respecting

the good deeds of all parties; and the only fault of which we have to complain, is a too obvious desire to conceal the failings and errors of some of his missionary heroes.

Battles of the British Navy from A.D. 1000 to 1840, by Joseph Allen, 2 vols.—At a first glance, these closely packed "ship-shape" volumes had an encouraging appearance, and promised to be a welcome addition to the sailor's library, but a hasty examination has by no means tended to confirm this first impression. We, however, shall leave the work to the judgment of professional critics—only observing, that eighty pages out of a thousand are but small space for the heroic deeds and darings of our heroes for 700 years, i. e. from 1000 to 1700—that errors of the press must be more than reasonably numerous when, in cutting open the pages, we stumbled on such misprints as Prince of Mombasin, Chevalier de Rohun, Admiral Palisier, &c., and that if our old Admirals at all resembled the portraits here given of them, it is no wonder that the enemy was afraid to look them in the face.

The Nervous System and its Functions, by Herbert Mayo, F.R.S.—To our professional readers, the name of Mayo will be a sufficient guarantee for the worth of any publication that bears it on the title-page; to the unlearned, the work immediately before us is absolutely a sealed volume. But there may be a few, a very few general readers, who are so far acquainted with the outlines of anatomy and physiology, as to understand the technical terms employed, and to have formed some loose notions on the subject of which it treats; and to them we can recommend it, as containing in the most condensed form, the leading facts, opinions, and fancies, connected with the present state of cerebral knowledge. As a summary of cerebral science, it will form a valuable addition to the student's library; though, from its very condensation, it must inevitably be too obscure for those who have everything yet to learn.

The Year Book of Natural History for Young Persons, by Mrs. Loudon.—Our copy of this little volume happened to fall into the hands of a lady-naturalist, and we cannot give a better opinion of its merits than in her words—"This is the nicest little book I have yet seen on popular Natural History. It contains a great fund of knowledge, pleasantly told, and reminds us of that best of tales in the *Evenings at Home*—"Eyes and no Eyes."

Four Sermons, by S. Wilberforce, M.A.—These discourses were delivered before the Queen, and are "published by command," which may possibly become recommendation, and we cannot discover any other.

List of New Books.—The Bible, with Critical and Explanatory Notes, by D. Davidson, with index and maps, folio, 77s. 6d.—*The Little English Flora*, by G. N. Francis, author of 'Grammar of Botany,' &c., new edit. 12mo. 7s. 6d.—*Restoration of the Cathedral Church of Hereford*, with plates, 8vo. 7s. 6d. cl.—*Wells's Property and Income Tax Act*, new edit. 12mo. 3s. 6d.—*The Highlands and Islands of Scotland*, by P. and G. Anderson, new edit. 12mo. 10s. 6d. cl.—*Bloomfield's (Bishop of London) Three Sermons on the Church*, 18mo. 6d. 8vo.—*Stephens's Travels in Central America*, new edit. 2 vols. 8vo. 32s. cl.—*Life and Times of Louis Philippe*, by Rev. G. N. Wright, 8vo. 16s. cl.—*Kenrick's Key to Latin Exercises*, new edit. 8vo. 5s. cl.—*Popular Scottish Biography*, by W. Anderson, Esq., 12mo. 10s. cl.—*The Customs Act*, 5 & 6 Vict. c. 47, with index, f. 1s. 6d. 8vo.—*The Book of the Farm*, by H. Stephens, Vol. I., royal 8vo. 30s. cl.—*Bingley's Natural History of Animals*, with plates by Howitt, 12mo. 7s. 6d. cl.—*The Book of one Syllable*, square 16mo. 3s. cl.—*Tales of the Braganza*, &c., by T. H. Osborne, royal 12mo. 9s. 6d. cl.—*The Art of Conversation*, by Capt. Sabertash, f. 3s. 6d. cl.—*Battles of the British Navy*, by Joseph Allen, 2 vols. 12mo. 11s. 1s. cl.—*Ellis's British Tariff for 1842-3*, 12mo. 6s. cl.—*Thomson's Seasons*, with wood engravings, and Life, by Murdoch, edited by Bolton Corney, Esq., crown 8vo. 21s. cl.—*The Paris Estafette*, or Pifferrings from the Paris and Dover Post-bag, with portrait and wood-cuts, 12mo. 6s. cl.—*Bickersteth's Christian Truth*, 24mo. 2s. 6d. cl.—*Hankinson's Lectures on Personal Religion*, f. 2s. 6d. cl.—*Le Vert's System of Teaching Languages*, 12mo. 5s. cl.—*Clement's Customs Pocket Manual of New Duties*, 18mo. 2s. cl.—*Mackness (Dr.) on the Climate of Hastings*, post 8vo. 4s. cl.—*Crichton's (Sir Alexander) Commentaries on Medicine*, 8vo. 9s. cl.—*Little Coin, Much Care*; or *How Poor Men Live*, by Mary Howitt, 18mo. 2s. 6d. cl.—*Maurice's (Rev. F. D.) Kingdom of Christ*, new edit. 2 vols. 12mo. 11s. 1s. cl.—*The Seven Churches of Asia*, by Rev. J. A. Wallace, f. 3s. cl.—*The Churchman's Brief Manual of Baptism*, 4 parts, by the Rev. C. E. Kennaway, new edit. f. 4s. 6d. cl.—*The Pulpit*, Vol. XLII., 8vo. 8s. 6d. cl.—*Bernard's Synagogue and the Church*, 8vo. 7s. 6d. cl.—*Dollinger's (Rev. J. J.) Church History*, translated by the Rev. Edward Cox, Vol. IV., 8vo. 7s. 6d.—*Nicholls's (Rev. B. E.) on the Proverbs*, 12mo. 2s. 6d.—*Newman's (Rev. J. H.) Church of the Fathers*, new edit. 12mo. 7s. cl.—*Dowding's (Rev. W. C.) Village Lectures on Homiles*, 12mo. 3s. 6d. cl.

THE BYE-PATHS OF ENGLAND.

"And all within were paths and alleys wide,
With footing worn, and leading inward far,
Fair harbour that them seems; so in they entered are."
Faery Queen.

ENGLAND was merry England in her childhood; and May-poles and tilting-poles were her toys; and King Alfred made her nursery rhymes, and Giraldus Cambrensis told her nursery stories, and Friar Bacon gave her magic lanterns, and the Venerable Bede taught her to say her prayers, and William the Conqueror put her to bed at eight o'clock. So merry England grew on to fair and blooming girlhood. Then came the conflict of affections and passions; and some sought her for her money, and others wooed her for herself, and rivals struggled and bled for her, and she knew sorrow and suffering and tears. Afterwards she became devout, and took up her cross; and was persecuted, first, for being a Protestant, and then for being a Catholic. But England was growing old England then, and had a prototype in her virgin Queen, rough and bluff, but true-spirited and stout-hearted; and her people swore that she was young and merry still. Then she took to politics, and committed some blunders, as ladies often do; but her restoration soon followed. Since then she has been hailed as good old England. She was good old England when she stood in the breach between tyranny and Jacobinism—"the Thermopylae of the universe"—when she sat like Mordecai in the gate, the only one that would not bow down—when she sheltered seven thousand starving and exiled priests of a different creed from her own—when she put half a million into the "Patriotic Fund" in spite of the drains on her purse during a protracted war. Now Britannia sitteth with her lion at her feet, less young, 'tis true, than Una, (for everlasting truth can ne'er grow old,) but graceful and majestic still; and, since her flag has waved in every foreign port, and transmarine continents and continent-like islands have adopted her language, and her navy, her army, her merchants, her missionaries, have wrought wondrous things, she has been called great Britain! Little in size, but great in power, like her representative. There are who have said that she is now unprotected—that her lion sleeps, and her spear, like Saul's, has been stolen away—but let any insult or injury be offered to island or island-queen, and brave hearts will rally round them.

But a change comes over the spirit of our dream and of our island, and the Bye-ways of England are thrown open, as her highways heretofore, and railroads cut her quiet villages into segments, and bring their shadiest walks into broad daylight—viaducts arch her loveliest heaths, and bisect her aristocratic parks—steamboats bring her far-apart places into close contact, and seem to annihilate space with time, to make the public happy. The Village of Palaces, where Cardinal Beaufort died, and Henry VIII. walked round More's garden with his arm round his chancellor's neck, and the Duchess of Mazarin got up the first Italian opera performed in England, and Count Zinzendorf ended his strange but benevolent life, where Sir Hans Sloane planted his physic garden, and the Brunels took counsel together how they might build aerial arches and undermine proud rivers—has become a place of pot-houses, with Don Saltero's at their head; Hampton Court, where Royal Anne "would sometimes counsel take, and sometimes tea," a resort for pleasure-vans—Richmond Park, only less trampled than her sister of Greenwich this Whitsuntide, with its 50,000 visitants—Claremont, sacred to her whom England loved and lost, a convenient lounge from the Ditton station—in brief, England's Bye-paths are daily falling a prey to civil engineers and uncivil excavators. Much, however, is done for general utility and enjoyment, though individual and local advantages are necessarily sacrificed to the universal good. Who can rebuild an old ruin? or restore an historical site, with all its pleasant and serious memories of the great and good, the gifted, the persecuted, the admired or the unhappy? Much, however, after all will remain, and if the summer and the autumn leave us leisure, we shall, perhaps, visit some of the many memorable or beautiful spots that encircle this great city, and give a hint to our over-worked citizens, which may tempt them away from its stir and turmoil into the fresh air, and bring them into communion with Nature—though but for a day.

Even now they shall have the benefit of a stroll in and around

Norbury Park.

IN Surrey has been justly called "the garden of England." Box Hill, and its circumference of twenty miles, may be as aptly termed her *flower-garden*, since, within that space, the careful botanist may find every indigenous flower of our island. The stately mullin, lowly pimpernel, or poor man's weather-glass, euphrasia (eyebright with her mysterious legend), campanula rotundifolia, daffodil, heart's-ease, forget-me-not (beloved by small blue butterflies), wild clematis, woodbine, hawthorn, eglantine,—but why should I attempt to select, where Titania's upholsterers would have been puzzled, among such infinite variety, to decide on the decorations of her bower? Here Nature has her aviaries, her bee-hives, her shrubberies, and terraces; here bright-eyed Consumption suns herself, and dreams till she forgets her name and destiny; and, as "retired Leisure, who in trim gardens takes his pleasure," adorns them with many a classic bust and literary inscription, so may his eye, ranging round Box Hill, or the adjacent heights of Norbury, rest on mementoes of the poet, historian, and philosopher,—on the retreats of Anastasius Hope, Conversation Sharp, Mill, the historian of British India, Locke, the Mæcenas of English literature and art, Madame D'Arbly, the pet and protégée of Johnson and Burke, and of royalty, and in the far-off horizon, Evelyn, of Wotton.

But I must not talk of books and bookmen yet. Come with me to the terrace, worn in the hill-side of Norbury Park by the countless feet of slumbering generations, and look across the valley to the hills sweeping down into it on every side.—Leith Hill, with its thousand feet of altitude, Deep Dene, temple-crowned "to the best of brothers," Betchworth of chesnut avenues, Denbigh's, leafy and undulating, Box Hill, making the most of his five hundred feet, abrupt and half bare, with his summer clothing, green all the year round, worn like the mantle of an Indian king,—and nearest and fairest, Norbury herself,—

—where, up the sunny banks

The trees retire in scattered ranks
Save where, advanced before the rest,
On knoll or hillock rears his crest,
Lonely and huge, the giant yew,
As champion to his country true,
Stands forth to guard the rearward post,
The bulwark of the scattered host.

How the heart swells, as if it felt the huge space from hill to hill consciously occupied by deity! Such scenes must be enjoyed silently; you are passive—intensely satisfied—you feel the religion of nature—you look towards the grim yews between one and two thousand years old, flung into "frantic attitudes," as Lord Lindsay says of the cedars of Lebanon, as though the cross had transfigured in them the agonized spirits of their old worshippers, and you muse on the *Druids*—you criticize the formation of Box Hill, and remember that sea-shells are found on its top, and you think of the *Deluge*—you consider who drew the ground plan of this fair spot, and you revert to the *Creation*.

Many who have travelled in Switzerland and Italy have found the wooden bench on this terrace a sort of Comus's seat; and, like Comus, I might tell them

I know each dingle, &c.,

but I will not fatigue my companions by showing them all at once. The lower part of the park is priory land. The old priory, afterwards the mansion-house, stood half-way between the two bridges, and the lofty vaulted kitchen, or refectory, still exists, with a niche high above the wide fire-place; but the principal part of the present building is modern, and in the occupation of farm servants. Medals have been dug up in the garden, which the medallist of the British Museum has pronounced to be pocket-pieces, sent by the monks of Bayeux to their brethren in England as Christmas presents. It was at Norbury Priory that Sir F. Stidolph received John Evelyn, when he walked over from Wotton; and we can fancy the good old gentleman, not a little pleased at the opportunity of showing off his trees to the famous planter and delightful writer, brushing his beaver, taking down his walking staff, and trotting off his guest to the upper park: for, says Evelyn, "here are such goodly walks and hills shaded with yew and box, as render the place extremely agreeable; it seeming, from these evergreens, to be summer all the winter."

He also mentions "the walnuts innumerable, which he was told brought in a considerable revenue." In fact, they have in some seasons sold for three hundred pounds; at other times, for no more than five shillings.

In the reign of Edward the Second, the house and lands of Norbury were held by the service of "half a knight's fee," to wit, ten pounds a year. In 1765, the estate was sold for 35,000*l.*; and nine years afterwards, resold to Mr. Locke, the accomplished friend of Sir Thomas Lawrence, and a true and consistent specimen of "the fine old English gentleman," uniting the attainments of a scholar and taste of a virtuoso with a liberality that descended on the obscure and struggling artist as well as on his more distinguished brethren, and a benevolence that condescended to the minute wants of his peasantry.

The air of Norbury has always been fostering. Sir Thomas Lawrence was here encouraged to make his first and only attempt at modelling, and finished an eminently successful likeness of his venerable friend, of whom he always wrote and spoke in terms of the warmest affection. "I am not afraid," he says, "of forgetting this dear man, and know that I am the better for his life and death. It is thus a blessing, as well as a distinction, to have known him." And again, "I go to Norbury to witness grief and resignation, the one as sincere, the other as pious as can exist in the tenderest and most virtuous minds. Mr. Locke is to be buried, by his own accurate directions, in the simplest manner, and exactly as his mother was—a walking funeral, and the coffin borne by his labourers."

It was at Mr. Locke's table that the lively Fanny Burney met an interesting foreigner, brave, unfortunate, and speaking broken English. How could a young novelist's heart resist such attractions, when their owner did his best to win it? There seems, however, to have been parental disapproval to overcome; for we find Mr. Locke interceding for the lovers, bringing forward letters from the Prince de Poix and Count Lally Tolland in General D'Arbly's favour; obtaining, at length, a reluctant and apparently ungracious consent to the marriage, and himself taking Dr. Burney's place at the altar of Mickleham Church, and giving away the bride. With affectionate care he had hunted out a small cottage at Bookham, adapted to the slender finances of the young couple; and here, after they had been left awhile to their own resources, the relenting father sought them out, without giving notice of his intentions; and, sending in his name from his post-chaise, "ere he could reach the little threshold of the little habitation, his daughter was in his arms. How long—(and I think the naughty Fanny's tears here blotted her writing,) how long she there kept him she knew not, but he was very patient at the detention! tears of pleasure standing in his full eyes at his rapturous reception."

The good Doctor probably expected that the popular novelist of her day, and dresser to Queen Charlotte, would do better for herself than marry a poor *émigré*. She, on the other hand, with a head full of Orvilles and Delvilles, thought General D'Arbly a hero cut out quite according to pattern. And then what scenes he had for his wooing! The painted room! the Druid's Grove! the Cathedral Walk! Yet one would like to know that there had been a greater struggle than seems to have taken place between her affection for him and for so kind a father. To eke out her slender means, she wrote 'Camilla,' and published it by subscription. Kind Mrs. Locke took infinite pains to procure subscribers; and with the proceeds of the book, Mr. Locke built the authoress a pretty cottage at West Humble, on a piece of his own ground, which received the name of Camilla Lacy. Here we will suppose her existence to have been quite paradisaical; yet we are angry with her for showing so little power of description in the novel she wrote among such beautiful scenery. There is more freshness of nature in the city scenes of 'Evelina' than in the country scenes of 'Camilla.' She gives you no little peeps,—glances, as it were, of Norbury between the trees; her heroine's rural walks do not recal *real* fields and lanes, with stiles, and wild-flowers, and brambles, and the cuckoo in the distance. On the other hand, "Conversation Sharp" could illustrate abstract truths by easy and graceful allusions to the beautiful scenery around

him. "There are few difficulties," he writes, "that hold out against real attacks. If we do but go on, some unseen path will open among the hills," and so on. He reminds his friend, Francis Horner, of the long and singular conversation that had taken place between them in the woods of Norbury, and refers to

The Druid grove, where many a reverend yew
Hides from the thirsty beam the noontide dew.

Such a man deserved, if not to have a Norbury Park, yet to live, as he did, on its skirts, "like fringe on a petticoat."

A word, at parting, on the sylvan prides of the park. Evelyn commemorates its walnuts, yews, and oaks, but makes no mention of its beeches. Perhaps they were not flourishing in his time, but I could now show him, if he were here to see, a beech whose branches extend over an area of upwards of a hundred feet in diameter; another, whose white, smooth trunk runs up a perpendicular height of a hundred and sixty feet: another, another, and another, with faces that one knows again after the lapse of seven years, as readily as the eyes, nose, and mouth of old acquaintances, and each as different from his neighbour, as distinct in his own individuality, as the men one meets in the streets—true "old English gentlemen" of the forest. The yews, however, are the peculiar glory of the park; the veritable *verd antiquæ*. "A hundred years is in their sight but as yesterday." They were in their manhood when William the Conqueror was a little boy. Each century, 'tis said, adds a new bark to their rugged coats; and, now and then, when a decayed giant goes to his long home, the number of barks which come to light at his dissection enable the learned to identify him with one of "the old yews of Mickleham," registered in Doomsday Book. Perchance, 'tis a fable—I, for one, mean religiously to believe in it, as well as in the murder of the little princes in the Tower, in spite of all the "Historic Doubts" that ever have been or shall be written. These old superstitions are as proper to the woods, as ghost stories are to old castles. How finely these yews are placed on this steep slope; and what strange, mysterious sounds of unseen life are heard among them in the stillness of evening! Measure one of the trunks. Eighteen feet in girth? Aye, it is so; within a foot of the size of the second-class cedars which Lord Lindsay praised so poetically. None of your modern small waists here! And they have their names, too—bells are christened, and why should not we christen trees? There is "the Fallen Giant," coiled up as in mortal agony; "the King of the Park"; "the Horse and his Rider." It would be easy to invent more. The Druids perhaps walked here—Monks certainly did. And lo! close adjoining the yews, "the Cathedral Walk"—one of those natural aisles whose meeting elm-boughs suggested the Gothic arch. Thus, in immediate juxtaposition, stand the symbols of Britain's earlier and later faith. Here, you have the vegetable saints of the "ConTEMPLATORS," (if the Hebrew root of their name be the true one,) the astrologers, geometers, historians, statesmen, poets, priests, prophets, of our unfledged nation—they held the heart by many strings! But there stands the cross; and down go the crows! The idolatrous priests, where are they? Their "stones of memorial" have become blank records; they are "made ashamed of the oaks they have desired"; their "groves on the high places" are cut down, with this almost solitary exception—its gloomy shade beneath which nothing flourishes, a true emblem of the dark Druidical faith. But, advance a few steps farther; and look upward and around. Do these cathedral arches, towering to heaven and admitting its cheerful light, freely ventilated by the winds that blow wherever they list, and sheltering, not slaying, the seed-bearing herb,—oh! do these whispering boughs speak an untranslatable language? Do they illustrate nothing? M.

OUR WEEKLY GOSSIP.

AN advertisement appeared last week in the *Literary Gazette*, which requires a word or two of explanation. It set forth the claims of what is called a "Literary, Scientific, and General Life Assurance Company"—a company "to be" incorporated by Royal Charter, with a capital of 500,000*l.* in 50,000 shares of 10*l.* each. Any question of ordinary assurance we should have left to the judgment of the public, but this is one of special assurance, to which the advertise-

ment does but imperfect justice. In a Prospectus now before us, the Literary Fund Society is strangely mixed up with the announcement of this company; the speeches of Prince Albert and the Marquis of Lansdowne at the anniversary dinner, are quoted at some length, and the public are then informed that as "the means of the Literary Fund Society" are "quite inadequate to afford to the numerous applicants that degree of assistance, which their wants and station in society so imperiously demand," therefore "the Literary and Scientific Association" has been established, and will "open up a new source, from whence effectual aid may be administered to those of the class before alluded to; affording, as it will, not the fluctuating and uncertain income which charity affords, but the steady revenue which a well managed assurance society cannot fail to supply," and accordingly "a tenth of the profits" of this Assurance Society are, it is announced, "to be paid to the Literary Fund," and "two directors and one auditor" of the Literary Fund Society are "to be requested" to act in conjunction with those of the company. Applications for shares are to be made at "the temporary office of the society, 73, Great Russell-street." Now, for anything we know to the contrary, this prospectus may have been put forth in plain sincerity by simple and honest persons, and the directors of the Assurance Society, when announced, may turn out to be, as described, men of integrity and unimpeachable honour.—in the meantime, however, as the projectors have been pleased designedly to mix up the Association with the Literary Fund Society, and to open a temporary office in the same house where that Society has chambers, we think it right to state distinctly, that the Assurance Society has no connection whatever with the Literary Fund Society.

Our attention having been thus drawn to one benevolent project for the benefit of literary men, we may as well make some inquiries respecting 'The National Association for the Encouragement and Protection of Authors.' This association came forth, some three or four years since, under distinguished patronage—and was, we remember, countenanced by Mr. G. P. R. James, Mr. Crofton Croker, and some few other literary men, whose names appeared in the list of the Committee. Here, again, the heart was gladdened with a talk about 200,000*l.*, in 2,000 shares of 10*l.* each, and 9,000 of 20*l.* each. For a time the "National Association" was very active—circulars were forwarded in every direction, to noblemen and gentlemen, who were requested to give their support to the project; and to suit their taste and presumed disposition, there was a special class of subscribers called "Patron Proprietors"—gentlemen who were "not to be troubled" with matters of detail, but might pay their money at once, and the dividends would be paid into the hands of their bankers; and these parties were, by "special provisions in the deed, to be secured against all liability." Now correspondents have applied to us, from time to time, to know what was the amount collected—where they can obtain a list of the "Patron Proprietors" and other subscribers—and what became of the money. Perhaps some of those gentlemen, who served on the committee, will enable us to answer these questions.

On the subject of literary piracy we have received the following letter from Mr. Charles Dickens. We do not see very clearly the good that would result even from a general adoption of the proposed measures; but the straightforward and hearty way in which the writer has, under the most discouraging circumstances, set himself in opposition to the disgraceful practice, entitle all his suggestions to respectful attention:—

1, Devonshire Terrace, York Gate, Regent's Park, 7th July, 1842.

You may perhaps be aware, that during my stay in America, I lost no opportunity of endeavouring to awaken the public mind to a sense of the unjust and iniquitous state of the law in that country, in reference to the wholesale piracy of British works. Having been successful in making the subject one of general discussion in the United States, I carried to Washington, for presentation to Congress by Mr. Clay, a petition from the whole body of American authors, earnestly praying for the enactment of an International Copyright Law. It was signed by Mr. Washington Irving, Mr. Prescott, Mr. Cooper, and every man who has distinguished himself in the literature of America; and has since been referred to a Select Committee of the House of Representatives. To counteract any effect which might be produced by that petition, a meeting was held in Boston—which you will remember is the seat and stronghold of Learning

and Letters in the United States—at which a memorial against any change in the existing state of things in this respect was agreed to, with but one dissentient voice. This document, which, incredible as it may appear to you, was actually forwarded to Congress, and received, deliberately stated, that if English authors were invested with any control over the republication of their own books, it would be no longer possible for American editors to alter and adapt them (as they do now) to the American taste! This memorial was, without loss of time, replied to by Mr. Prescott, who commented, with the natural indignation of a gentleman, and a Man of Letters, upon its extraordinary dishonesty. I am satisfied that this brief mention of its tone and spirit, is sufficient to impress upon any candid reader that it becomes all those who are in any way connected with the Literature of England, to take that high stand, to which the nature of their pursuits, and the extent of their sphere of usefulness, justly entitle them, to discourage the upholders of such doctrines by every means in their power, and to hold themselves aloof from the remotest participation in a system, from which the moral sense and honourable feeling of all just men must instinctively recoil. For myself, I have resolved, that I will never from this time enter into any negotiation with any person for the transmission across the Atlantic of early proofs of any thing I may write, and that I will forego all profit derivable from such a source. I do not venture to urge this line of proceeding upon you, but I would beg to suggest, and to lay great stress upon the necessity of observing, one other course of action: to which I cannot too emphatically call your attention. The persons who exert themselves to mislead the American public on this question, to put down its discussion, and to suppress and distort the truth in reference to it in every possible way, are (as you may easily suppose) those who have a strong interest in the existing system of piracy and plunder: inasmuch as, so long as it continues, they can gain a very comfortable living out of the brains of other men, while they would find it very difficult to earn bread by the exercise of their own. These are the editors of newspapers almost exclusively devoted to the republication of popular English works. They are, for the most part, men of very low attainments, and of more than indifferent reputation; and I have frequently seen them, in the same sheet in which they boast of the rapid sale of many thousand copies of an English reprint, coarsely and insolently attacking the author of that very book, and heaping scurrility and slander upon his head. I would therefore intreat you, in the name of the honourable pursuit with which you are so intimately connected, never to hold correspondence with any of these men, and never to negotiate with them for the sale of early proofs of any work over which you have control, but to treat on all occasions with some respectable American publishing house, and with such an establishment only. Our common interest in this subject and my advocacy of it, single-handed, on every occasion that has presented itself during my absence from Europe, form my excuse for addressing you.

I am, &c.

CHARLES DICKENS.

A new work, by the Rev. Dr. Vaughan, entitled, 'The Age of Great Cities, or Modern Civilization viewed in its relation to Intelligence, Morals, and Religion,' and 'Notes of a Tour in the Manufacturing Districts of Lancashire, in a series of Letters to his Grace the Archbishop of Dublin,' by W. Cooke Taylor, LL.D., are announced as in preparation. At the last meeting of the Paris Academy of Sciences, Prof. Liebig, of Giessen, was elected a Corresponding Member.

M. Melinon, the naturalist sent by the French government to Cayenne, has just arrived at Bordeaux, with a large collection of rare and beautiful plants destined for the Garden of Plants. He has also brought over some large hooded snakes, and an amphibious animal, called the Cahini, never before known in France, which will likewise be deposited in the national Museum.

The third meeting of the Society of Naturalists, of Hungary, is fixed to take place at Neushal and Szilacs on the 4th of next month.

The Sherwood Foresters, as we see by the *Nottingham Mercury* obligingly forwarded to us, last week held their annual meeting in honour of science, literature, and moral worth, and especially of all those worthies who have contributed to the renown of the "merrie green-wood." There is something very spirit-stirring and delightful in these open air gatherings—in the thought that the humble and the fevered artisan ceases even for a day from his monotonous labours, and escaping from the crowded haunts of men, communes with Nature in the quiet cool air of the old green-wood. The chairman well observed,—"Their forest home possessed within itself sufficient attraction to their humble minds; they sought not the demoralizing scenes witnessed at the cock-pit or bull-bait, but wished rather to draw men's minds from such relics of a barbarous age to the more enlightened contemplation of the once peerless glades of noble Sherwood, our own beloved Sherwood, beautiful as a wreck of Paradise. Who for a moment could contemplate Old Birkland without exclaiming 'Great and glorious are thy works, O Lord!' Who could thread the mazes of that Forest without conjuring up the images of the Edwards and Henrys, who, in days

long past, had trodden those forest glades! We have felt ourselves holding converse with Robin Hood and his merrie men, and have gone back to the days of Friar Tuck, Little John, and all that band of archers, around whose lives the immortal Scott has thrown a halo of glory in his witching novel of 'Ivanhoe.'—These are our feelings—these are the motives which actuate us, and which, if carried out, will at no far distant day unite us all in the indissoluble bands of friendship. We broach no new theories, and we discuss not politics; we wish to make true and reverend to the State, all men; we seek to banish ignorance and superstition. These, these I say are our objects."—Surely it would be wise in the aristocracy to encourage these humble celebrations—every locality has its Sherwood; and no man can calculate the moral consequences of such gatherings under such influences.

BRITISH INSTITUTION, FALL-MALL.

The Gallery, with the WORKS of the late SIR DAVID WILKIE, R.A., and a selection of PICTURES by ANCIENT MASTERS, OPEN DAILY, from Ten in the Morning till Six in the Evening—Admission, 1*l.*; Catalogue 1*s.* William BARNARD, Keeper.

Will close Saturday, 30th.

NEW SOCIETY OF PAINTERS IN WATER COLOURS.—THE EIGHTH ANNUAL EXHIBITION IS NOW OPEN at the Gallery, FIFTY-THREE, FALL MALL, from 9 o'clock till Dark. Admission, 1*l.*; Catalogue 6*d.* JAMES FAHEY, Sec.

DIORAMA, REGENT'S PARK.

THE TWO PICTURES, now exhibiting, represent THE VILLAGE OF ALAGNA, in Piedmont, destroyed by an Avalanche, painted by M. BOUVOIS; and THE SHRINE OF THE NATIVITY, at Bethlehem, painted by M. RESOUX, from a Sketch made on the spot by D. ROBERTS, R.A. in 1839. Both Pictures exhibit various effects of light and shade. Open from Ten till Five.

ROYAL POLYTECHNIC INSTITUTION.

Mr. FOX TALBOT'S CALOTYPE PROCESSION shown and explained (exhibiting the spontaneous production of a Picture) at Two o'clock Daily.—The further List of Lectures by Dr. Ryan, Professeur Bachoffner, and other Lecturers, is suspended in the Hall, and includes every New Subject in Practical Science, addressed to the YOUTHFUL VISITORS during the MIDSUMMER HOLIDAYS.—In the ASTRONOMICAL ILLUSTRATIONS, the ECLIPSE of the SUN of the 8th inst. will be introduced.—THE COLOSSAL ELECTRICAL MACHINE, DISSOLVING VIEWS, DIVING-BELL, and DIVER.—The New Edition of the Catalogue (just published) contains a full description of the beautiful Models in the NEW ROOMS next CAVENDISH SQUARE.—Leader of the Band, Mr. Wallis.—Admission, 1*l.* Schools half-price.

THE THAMES TUNNEL.

is OPEN daily, (Sunday excepted), from Nine in the Morning until Dark, and lighted with Gas. The present Entrance is on the Surrey side of the River, close to Rotherhithe Church. The Tunnel is now completed, and is 1,200 feet in length. Admission, 1*s.* each. Vision will shortly be enabled to pass through from the Middlesex side, and of which due notice will be given.

By order of the Board of Directors.

Company's Office, J. CHARLIER, Clerk of the Company.
2, Walbrook Buildings, City, July, 1842.

MEETINGS FOR THE ENSUING WEEK.

TUES. Horticultural Society, 3, P.M.

WED. Microscopical Society, 8.

MUSIC AND THE DRAMA

MUCH has been going on in the musical world during the past week—though the season draws near its close. Several performances of the 'Stabat' have been given:—"more last words" by the Rachel, who has found, it would seem, her English more constant than her French public:—another *fete* at Stafford House, for the benefit of the Poles,—and a service in Westminster Abbey, at which Purcell's music alone was performed. To-night, La Frezzolini takes her leave of the opera, in the character of *Anna Bolena*.

The English Theatres have of late afforded such slight and unpromising occasion for remark, that we thought it best to pass by them for a while, until their formidable rivals, the glorious summer evenings, and the foreign actors and singers, had given their slender claims to notice a better chance of being regarded. Bouffé and the French comedians having departed, Mr. Farren has come out in one of Bouffé's famous parts, 'L'Oncle Baptiste,' of which a coarse translation, entitled, 'Peter and Paul,' has been produced at the HAYMARKET this week. Mr. Farren's boldness is more to be admired than either his prudence or success; for to all who have seen Bouffé in the character, which, to use the emphatic French phrase, he "created," his English competitor will appear inferior. Indeed, it is not suited to Farren's style of acting, which is best adapted to characters of artificial life. 'L'Oncle Baptiste,' or Peter, is a plain, hard-working mechanic, of genial disposition and kindly feelings, but of vulgar habits, dotingly fond of his brother Paul, an inventive genius, whose talents he reverences. Peter is mortified and incensed at Paul refusing to enter into partnership with him, and not only leaving him for a grand establishment and noble alliance in London, but shunning

him afterwards. On the expression of the wounded feelings of the slighted brother depends the interest of the piece; and to make these touching, the homely habits of Peter required to be portrayed with skill and delicacy: this Bouffé did to admiration; but Farren's strongly marked and rigid style does not adapt itself to the requirements of the part; and he was loud, violent, and bitter; making the man with whom the audience are called upon to sympathize an object of distaste and aversion; consequently the piece flagged; though, to those who had not seen the original Peter, Farren's acting may have appeared admirable. 'The Way to Keep Him,' and the 'Clandestine Marriage,' have been performed at the Haymarket; but neither in *Sir Rashful Constant nor Lord Ogleby* did Farren appear to such advantage as we have seen him; and, if we except Mrs. Nisbett and Mrs. Glover, the latter of whom is too apt to forget with Mr. Farren that broad farce is not genteel comedy, there has been nothing in the cast of either to admire. 'The Rose of Arragon' has withered on the stalk; Mr. and Mrs. C. Keane have proved less efficient supports than was anticipated, and their removal this week will leave the last flower of Mr. Knowles's genius to wait another blossoming time.—At the ENGLISH OPERA we have merely to chronicle the production of a high-flown musical melo-drama, called 'The Lone Hut'; and a new farce entitled 'Cousin Lambkin,' of which Harley is the hero.—The NEW STRAND depends solely on the attractions of Mr. and Mrs. Keeley, who have lately invoked 'Lucky Stars' with such success that the ringing dogstar yields to their happy influence. This little piece is very smartly written and neatly constructed; and Keeley as a cobbler turned conjurer, and Mrs. Keeley as his shrewish helpmate, are irresistibly droll.—At the SURREY, opera reigns triumphantly; Miss Romer and Mrs. Serle, Harrison and Leffer, being the principal vocalists.—A benefit is talked of for Mrs. Yates, who, we regret to hear, is left in a state that makes such aid but too acceptable.—The note of preparation is already sounding for the opening of COVENT GARDEN, under Mr. Kemble's management: this will take place early, in order to prolong, as much as possible, the short opportunity that remains for hearing Miss Adelaide Kemble, who retires from the stage on her marriage, which is expected to take place at Christmas. This disappointing news, for the public, at least,—finds some countervailing hope in the announcement that Mrs. Alfred Shaw, who has been performing with *éclat* in Italy, will make her *début* at Covent Garden.

MISCELLANEA

French Academy.—The annual meeting took place on the 30th ult. The proceedings were opened by an Address from M. Villemain, the Minister of Public Instruction. The prizes for an Eulogium on Pascal were awarded to M. Puibusque and M. Vignier. Count Molé then announced the Monthyon prizes, given for virtuous conduct, which had been generally awarded to persons who had distinguished themselves by their exertions at the late accident on the Versailles Railroad. For discoveries calculated to lessen the danger in exercising insubrious arts, the Academy voted 7,000 francs to Prof. de la Rive, of Geneva, for his invention of the process for gilding by means of galvanism; and divided the remaining 12,000 francs equally between M. Elkington and M. de Roolz, for having improved and extended the application of M. de la Rive's discovery.

Paris Academy of Sciences.—June 20.—A paper by M. Vicart was read, 'On the nature of Pouzzolanes.'—M. Vicart, having discovered the nature of the substance, has been able to compose a substitute with pure clay, calcined whilst exposed to a dead heat, so as to get rid of eight or nine-tenths of the water combined with it. The best clay for the purpose, says this gentleman, is pipe-clay; and in proportion to the admixture of iron, manganese, carbonate of lime or sand, is the defect of quality.—M. Degoussé gave an account of some recent results in the making of Artesian wells. He states that he has bored for water in the plateau which extends from Lagny to the forest of Arminvilliers, at the height of 110 metres above the Marne. In one spot an abundant supply of water rushed out, although he had gone to a depth of only nine metres. With M. Degoussé's report he forwarded to the Academy a letter which he had

received from Aimé-Bey, the director of the mines of Egypt, who announces his intention of re-opening some of the bored wells of the ancients, at the foot of the Libyan chain, and requests that the necessary instruments may be sent out to him for that purpose.—June 27.—The first paper read was a communication from Mr. Warden, giving an account of the population of the United States, as shown by the last census.—A paper on the effect of oil in calming the waves of the sea, by M. Van Beck. M. Van Beck thinks, with Franklin, that the phenomenon may be explained by admitting that there exists between air and water a certain natural affinity or adhesion. Water, he says, takes in with avidity the air with which it comes in contact, so that it is with difficulty expelled. It results that, whilst a current of air passes over the surface of the water, the air attaches itself to the liquid, and creates small waves, which, as the wind increases, become large and dangerous. As soon as these waves are covered with a membrane of oil, the adhesion of the air upon the water ceases to exist, and the surface is no longer disturbed.—In a paper on the necessity of the use of calcareous salts in nutrition, by M. Chossat, that gentleman explained why the use of pure gelatine, which has hitherto been so erroneously ordered in hospital practice as being nutritious, is directly the reverse, as was recently shown in some experiments on dogs by a commission of the Academy. M. Chossat having remarked that pigeons are in the habit of adding to their food a quantity of calcareous matter collected from walls, resolved upon shutting up a number of them in wooden cages, and feeding them upon wheat, carefully cleaned so as to be free from any foreign substance. In the first two or three months, the pigeons did not seem to experience any inconvenience; but, at the end of that time, they began to drink more copiously of the water which was placed for their use, and in a short time the quantity of water consumed was eight times what it had been. A diarrhoea then commenced, which was at first moderate, but soon became violent; the pigeons then fell off gradually in bulk, and between the eighth and tenth month from the commencement of the experiment they all died. On examining them after death, it was found that their bones had been acted upon in an extraordinary manner. In some places they had fallen off considerably in size, and were perforated with small holes; in others they had disappeared altogether.—A communication was read from M. Combes, on the thermal springs of Hammam-Escouton, on the banks of the Raz-el-Akhar, in Algeria, about thirty leagues from Bona. The waters of these springs, which rise in the midst of a plain from little conical domes formed by themselves, are sulphureous, and of the high temperature of 80° of Réaumur.

Metropolitan Improvements.—Petitions are in course of signature praying for a revision of the improvements now being carried out in the spirit of the economical suggestions of the Committee of the House of Commons, which sat in 1840. It is certainly much to be regretted that new streets, intended to form great public thoroughfares, should be constructed of inadequate width; and this would appear likely to be the case with regard to the new street from Piccadilly to Long-acre, which, unless the public interfere, will in a few months be laid out at a width of only 52 feet from house to house. The following tabular statement has been circulated by the Metropolitan Improvement Society:—

Width of some of the principal Streets in London, from a Survey made under the direction of J. L. Donaldson, Esq.

Names of Streets.	Width of Roadway.	Parapet and Area.	Total width from house to house.
Waterloo-place	115 7	43 10	159 5
Portland-place, average	79 2	47 4	126 6
Farrington-st., Old Fleet-market			97
New Bridge-street, Blackfriars	57	34 4	91 4
Regent-street, near the Circus	54 11	32 10	87 9
St. James's-street, south end	53 7	24 2	77 9
Piccadilly, opposite Dover-st.	53 4	24 4	77 8
Oxford-st., opposite Newman-st.	46 7	26 7	73 2
Ditto, east end, near Regent-st.	47 1	25 4	72 5
Holborn, opposite Hatton-garden	46 10	25 6	72 4
Pall Mall, west end	45	25 8	70 8
Strand, opposite end of Catherine-street	47 2	21 7	68 9
Tottenham-court-road, average	41 6	24 8	66 2
Proposed new Street from Piccadilly to Long-acre			52

TWELFTH MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.
[From our own Correspondents.]

SATURDAY, JUNE 25.

SECTION A.—MATHEMATICAL AND PHYSICAL SCIENCE.

At the sitting this day, the first paper read was by Mr. Fox Talbot on the Improvement of the Telescope.

Mr. Fox Talbot said, that this subject occurred to him about two years ago, when the Earl of Ross (then Lord Oxmantoun) was making much larger specula for reflecting telescopes, than had ever been obtained before; and he thought, if once we had a very large and perfect speculum, it might be possible to multiply copies of it by galvanic means. He had observed, that if an electrolyte cast were taken from a perfectly polished surface, the cast was also perfectly polished; so that no defect of form from this cause could have an injurious effect on the speculum. The great and obvious defect was, that electrolytes were in copper, which reflected but little light. He mentioned these ideas to Prof. Wheatstone, who said the same had occurred to him; and he showed him a paper which he had drawn up some few months before, and in which he suggested the taking galvanoplastic casts of specula in platinum, palladium, silver, or nickel, and for especial purposes gilding the copper; taking care that the two precipitations adhered well to each other. So that (said Mr. Talbot) the idea had suggested itself independently to both of them; but, on comparing notes, they found differences. Though it had occurred to him (Mr. Talbot) to precipitate white metals, yet he did not think that platinum would have a sufficiently beautiful white metallic polish. Prof. Wheatstone had, however, made choice of platinum; and, varying the quantity till he found the required proportion, he obtained a mirror in platinum, which appeared to him (Mr. Talbot) to have quite brilliant polish enough, and to be white enough to answer the purpose; and he considered, therefore, that Prof. Wheatstone had proved, that, at least in one form, the specula of telescopes might be made by voltaic precipitation. His own idea was, that it might be possible to whiten the surface of the copper without injuring the form; and, therefore, having obtained a speculum in very bright polished copper, he (Mr. Talbot) whitened it, and transformed it into sulphuret of copper; and, after having retained it about a year, he did not perceive the smallest alteration in any respect. This, therefore, appeared to him a mode by which important results for astronomers could be obtained. For the last year, perhaps, nothing further had been done, either by Prof. Wheatstone or himself; but, the other day, being at Munich, he (Mr. Talbot) visited Prof. Steinheil, who showed him his inventions, and told him he had discovered a method of making specula by the electrolyte. It so happened, that both Prof. Steinheil and himself had published their respective methods about a month or six weeks before; the Professor having read a communication on the subject before the Academy of Sciences at Munich, and printed it, and he (Mr. Talbot) having published his in England. Their modes were, however, different, as Prof. Steinheil precipitated gold upon the speculum of copper; and, having precipitated a certain thickness of gold, he then precipitated copper on the back of the gold, to give it sufficient thickness. He (Mr. Talbot) should have thought beforehand that gold would not reflect light enough to be available; but Prof. Steinheil informed him he had found, by careful experiment, that it reflected more light than polished steel. He allowed Mr. Talbot to look through a Gregorian reflecting telescope, of which the speculum was a common one, but gilded, and he found the image perfectly clear and well defined. A slight tinge of yellow was thrown over all the objects, but the image was perfectly clear and defined. Prof. Steinheil said, that in the course of a year, he should have a very large telescope, furnished not only with a speculum, but also with other apparatus, voltaically formed, so that telescopes might be made all from a good model, so as to insure greater accuracy of proportions; and in this way even very large telescopes might be constructed at a comparatively trifling expense. With reference to precipitating copper on the back of the gold, the Professor had a

simple expedient for securing adhesion. He first precipitated gold from the cyanide of gold, and he mixed with it cyanide of copper, and kept gradually increasing the quantity of the latter sort; so that an alloy was precipitated, which was continually increasing the copper with respect to the gold, till he had a speculum whose surface was gold, and which then became an alloy, the quality decreasing, till, at the bottom, it became pure copper. This was important; because, without such experiments, one would not have known that such results would have followed; for some philosophers supposed, that, if we attempt to precipitate the salts of two metals, only one was precipitated; but Prof. Steinheil informed him that they precipitated in union. He thus obtained a speculum with a face of gold and a back of copper. But, supposing the largest, cheapest, and best speculum were obtained, the framework of the telescope would be so gigantic, that few observers would be able to use the instrument. With a focal length of sixty to eighty feet, it would be quite unmanageable for any private individual. The idea occurred to him (Mr. Talbot), to have a tube fixed in an invariable position, and to have a perfectly true plane mirror, of a size somewhat larger than the concave speculum, placed in front of the tube, with an aperture in the centre. This plane reflector should be moveable about its centre in any direction; so that luminous bodies, falling first upon the plane reflector, were then reflected against the concave reflector, and passed through the aperture. The only motion requisite for the plane mirror would be one about its centre. The mechanical difficulties in the way of this plan would be far less than in the common method. Prof. Steinheil's idea on this point was somewhat different. He (Mr. Talbot) did not think it important in what direction the tube of the telescope was directed. Prof. Steinheil's idea was, that it should be pointed directly to the pole of the heavens, and kept as steady as possible, and that the plane mirror should have a simple motion of revolution, indeed two motions, but about a rectangular centre.

Shortly after this paper had commenced, the distinguished astronomer, Prof. Bessel, entered the Section. As soon as the President announced his name, which he accompanied with a few eloquently eulogistic sentences, the entire Section rose from their seats and applauded. M. Bessel expressed in warm terms his sense of the honour.—Mr. ISAAC HOLDEN observed, that the late Earl Stanhope had actually constructed a reflecting telescope on the very principles now proposed, both with respect to the fixity of the concave speculum, and the use of a moveable plane mirror.—Sir D. BREWSTER mentioned a plan proposed by an American, some years since, for generating a pro-tempore speculum, by causing quicksilver to revolve rapidly, when the centrifugal force would form it into a paraboloid, the very shape best adapted for the purpose.—The President inquired from Mr. Talbot whether some contrivance similar to the aerial telescope of Huygens and Hevelius might not be adopted so as to dispense with the plane mirror, the accurate construction of which was nearly, if not quite, as difficult a mechanical problem as the construction of the great speculum.—Mr. Talbot replied, that the principle of the aerial telescope was not, in his opinion, applicable to a reflector. The reflecting speculum being on the ground, it would be necessary, on that principle, that the observer should be elevated—an arrangement incompatible with his free change of place. In reply to a question from Sir T. Brisbane, Mr. Talbot said, that, with proper precautions, the original speculum would not run any risk of deterioration during the electrotype process.

Sir D. BREWSTER then proceeded to make three communications:—1, 'On Luminous Lines in certain flames corresponding to the defective lines in the Sun's light'; 2, 'On the Structure of a part of the Solar Spectrum, hitherto unexamined'; and 3, 'On the Luminous Bands in the Spectra of various flames.' I. After noticing Fraunhofer's beautiful discovery as to the phenomena of the line D in the prismatic spectrum, Sir David said, he had received from the establishment of that eminent man, at Munich, a splendid prism, made for the British Association, and one of the largest, perhaps, ever made; and, upon examining by it the spectrum of deflagrating nitre, he was surprised to find the red ray, discovered by Mr. Fox

Talbot, accompanied by several other rays, and that this extreme red ray occupied the exact place of the line A in Fraunhofer's spectrum, and equally surprised to see a luminous line corresponding with the line B of Fraunhofer. In fact, all the black lines of Fraunhofer were depicted in the spectrum in brilliant red light. The lines A and B turned out in the spectrum of deflagrating nitre to be both double lines; and, upon examining a solar spectrum under favourable circumstances, he found bands corresponding to these double lines. He had looked with great anxiety to see if there was anything analogous in other flames, and it would appear that this was a property which belonged to almost every flame. II. He had, by means of the prism from Munich, been enabled to extend the solar spectrum beyond the point where, according to Fraunhofer, it terminated immediately at the side of the line A, and he (Sir David) found one part to consist of about sixteen lines, placed so near to each other, that it was difficult to recognize the separation; but the lines, as they approached to A, were much nearer to each other than as they receded from it; consequently, that portion of the spectrum appeared concave, resembling so much the scooped-out lines of a moulding on wood, that it was scarcely possible to suppose that the beholder was not looking at such a moulding. He was led to observe an analogous structure near the line B; and upon carrying on this comparison of structure of one part of the spectrum with that of another, it seemed to him, that, by and by, something important would result; for there was a repetition of a group of lines, and similar lines, through different parts of the spectrum, as if the same cause which produced them in one part, produced them in another. III. He had endeavoured to procure all the minerals and artificial salts and other substances capable of combustion which could be had; and, in order to have a suitable combination, he used an oxygen light analogous to the Bude light. Every one conducting these experiments was aware that it was necessary to pass the light through a narrow aperture; but this would reduce the intensity of the light so much, as to make it difficult to observe the rays at the extremity of the spectrum; but he found that he could obtain the effect of a small aperture, by merely inclining the prism; so that, with a good prism, the great lines in the solar spectrum might be seen by using an aperture three or four feet wide, the whole breadth of the window, by the mere inclination of the prism, which had the effect of producing a narrowing, facing the light. He had obtained 200 or 300 results, which he had not had any leisure to group; but he would mention some of the general results. When nitrate of lead was thrown into combustion, remarkably fine lines were produced in the spectrum. The luminous line, D, of Fraunhofer, existed in almost every substance, especially in all into which soda entered, particularly in the flame of a common tallow candle; probably owing to the muriate of soda existing in the tallow. The hydrate of strontytes gave the lines very remarkably in yellow and green. The iodide of mercury did the same. Also in that remarkable substance, the lithoxanthemate of ammonia, first discovered and published by Mr. Fox Talbot, the fine lines were seen throughout the whole length of the spectrum; and there was a remarkable blue band, which he (Sir D. Brewster) had not distinctly recognized in any other flame. Indigo gave fine green and orange lines at equal distances from the D of Fraunhofer. Prussian blue did the same; calomel, nitrate of magnesia, litharge, also showed lines; the sulpho-cyanide of potash gave a violet and orange flame, with the lines extremely distinct. He hoped, at the next year's meeting of the Association, to be able to embody these various results in a regular report.

Sir W. HAMILTON said it was clear that these optical researches gave definite characters to things, which it would be necessary to include in any new history of chemical compounds.—Mr. FOX TALBOT expressed his gratification, that Sir David Brewster had taken up this curious branch of inquiry. Nothing was more extraordinary than the first fact discovered by Fraunhofer, that the double yellow ray produced in most flames, especially when soda was in combustion, should answer exactly to the double black line in the solar spectrum. This was one of the most unintelligible things in natural philosophy.—Sir

D. Brewster said that he might mention that the lines D were wanting in all spectra of the stars hitherto discovered. Fraunhofer, in his paper on the subject, stated that he had found, in all the spectra of the stars he had examined, black lines, but not the bright line D. He (Sir D. Brewster), in making experiments on the light of some of the coloured stars, particularly the blue and red stars in many parts of the heavens, looking at them through a rock-salt prism at an angle of 79°, the largest angle that would transmit the light, and with Sir James South's telescope, he found those black bands existing in the star, and that those coloured rays were wanting which would account for the peculiar colour of the star; so that the peculiar colour of red, orange, or green stars was to be explained by the want of those rays necessary to make white light. Sir David mentioned one star in particular (we think a Hercules), as exhibiting this peculiarity.

Mr. EATON HODGKINSON made a communication, 'On the mode of conducting Experiments on the Resistance of Air.'—Mr. Hodgkinson said, that, having been honoured by the Association with a request to pursue some experiments on the resistance of the air, he was desirous of exhibiting an instrument prepared for making the first series of these experiments. He proposed, in the first instance, to seek for the force of the wind moving at different velocities, upon plane surfaces of given dimensions, these surfaces being either perpendicular, or inclined at any angle, to its current; to determine this, he intended to place the apparatus upon the front of the first carriage of a railway train; the road along which the train passed having for a short distance poles stuck up, 100 or 200 yards asunder. He would try the experiment only on days when there was no perceptible wind; and then, if the time in seconds taken in passing between two poles be carefully observed, and the pressure indicated upon the discs (which were of two and of four feet area, both round and square), the resistance per square foot, with a given velocity, would be obtained. He hoped to determine these facts, with various velocities and at different angles of inclination in the discs, trying the same experiments with both discs at the same time, to ascertain whether the resistance to a square surface and a round one, of equal area, was the same, and that the results might correct each other. The directors of the Manchester and Birmingham Railway had kindly consented, at Mr. Buck's request, to allow him to make these experiments; and he was indebted to Mr. Fairbairn for the apparatus. This was placed on the table. It consists of two discs of wood (which may be of any form), made inclinable at any angle, by means of screws, and having an attached quadrant to measure the angle. To ascertain the force of the wind, one of Salter's balance springs is placed behind each disc, attached to the cross piece which connects the two rods of the discs; and this indicated the force of the wind at any moment.

Prof. STEVENS inquired whether a registering pencil was proposed, as, he conceived, if not, that the index would be in too constant motion to be observed with any accuracy. He also remarked, that a conversation had taken place in the Section at Plymouth on this subject, and Mr. Phillips proposed to avoid the necessity of waiting for calm days, by observing both when the train was going and on its return, and that thus, the effect of the air's own motion would disappear.—Mr. HODGKINSON did not think a registering pencil would be required; but if, during the progress of the experiments, he found that it was so, he would adopt it. He wished to avoid, if he could, introducing the element of the motion of the air itself at all, as, from the irregularity of those currents, he was not sure a perfect elimination of them could be obtained.

Mr. HODGKINSON then read a notice of his 'Experimental Inquiries on the strength of Stones and other materials.' After noticing the present state of knowledge (we might say of comparative ignorance) on this subject, and the experiments of Barlow, Rennie, and of experimentalists on the continent, Mr. Hodgkinson said, he had long felt anxious to ascertain how the three forces—the crushing, the tensile, and the transverse strength—and the position of the neutral line—(that separating the extended and compressed fibres in a bent body) were connected in bodies generally: and his experiments had for

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several years been directed to discovering facts upon each of these matters, in order to determine the question. His experiments some years ago, made for the British Association, with respect to the values of hot and cold blast iron, had shown that the ratio of the forces of ultimate tension and compression was nearly constant in all the species of cast iron; and a few experiments made at that time on sandstone and marble, had led him to suspect that nearly the same would be the case in these and other hard bodies. Through the liberality of his friend Mr. Fairbairn (who had, as usual, given him every assistance his establishment afforded), he (Mr. Hodgkinson) had made a great many experiments upon wood, sandstones, marbles, glass, slate, ivory, bone, &c.—to ascertain the tensile, crushing, and transverse strength of each; also, as far as possible, the situation of the neutral line. He had sought for these in thirteen kinds of timber, including oaks, pines, teak, &c.; all the different sorts of experiments were made, as far as possible, out of the same specimen in each case. The wood was of good quality, and perfectly dry, having been chosen for this purpose, and laid in a warm dry place for four years or more. After describing the mode and character of his experiments on the various substances named above (specimens of which he produced), Mr. Hodgkinson gave the following summary of their comparative results on marbles and stones of various degrees of hardness.

Description of Stone.	Crushing force per square inch, called 1,000.	Tensile force per sq. inch.	Transverse strength of bar 1 inch square, and 1 foot long.
Black marble	1,000	143	10.1
Italian marble	1,000	84	10.6
Reichale flagstone	1,000	104	9.9
High Moor stone	1,000	100	..
Stone called Yorkshire flag	1,000	..	9.5
Stone from Little Hulton, near Bolton	1,000	70	8.8
Mean rates	1,000	100	9.8

or calling the mean crushing strength per square inch, in the different articles experimented upon, 1,000, we have,—

Crushing strength, 1,000.	Tensile strength.	Transverse strength.	Ratio of mean tensile to crushing strength.
In timber	1,900	85.1	1 to 0.53
Cast iron	1,000	158	1 „ 6.6
Glass (plate and crown)	1,000	123	1 „ 7.8
Stone & marble	1,000	100	1 „ 10.5, or, 8.9, taking the hardest only.

The ratio of the crushing force to the transverse force is nearly the same in glass, stone, and marble, including the hardest and the softest kinds. Hence, if we know the transverse strength, in any of these bodies, we may predict the other; and, as glass and the hardest stones resist crushing with from seven to nine times the energy that they do being torn asunder, we may get an approximate value of the tensile force from the crushing force, or *vice versa*. These results render it probable, that the hardest bodies, whether cast-iron, glass, stone, or marble, admit of certain atomic displacements, either in tearing asunder or crushing; these displacements being in a given ratio to each other, or nearly so. In future calculations as to the strength of bodies, the crushing strength ought to be made the fundamental datum, for the reasons shown in this notice. The ratio of the transverse strength to the crushing strength is greater in cast-iron than in glass, marble, and sandstones, arising from the ductility of that metal. The necessity of enlarged inquiries in these matters will be seen, when it is reflected that calculations of the tensile strength of cast-iron, or marble, or stones in general, made from the transverse strength by the modes used by Tredgold, Navier, and others, give the tensile strength twice or three times as great as it ought to be.

The President observed, that Mr. Hodgkinson was too well known to the members of the Section to make it requisite to point out his peculiar accuracy and success as an experimental investigator; the fact, however, that he had been last year awarded the Royal Medal showed the value which the Royal Society attached to his researches. The field upon which he had now ventured was of the utmost importance, even in a national point of view; since, without a knowledge of the strength of materials, we

could not hope to raise durable structures without waste, we could not unite stability and economy.—Mr. HODGKINSON thanked the President for the kind terms in which he had adverted to his feeble exertions in the cause of practical science. The building in which they were assembled was, indeed, an exemplification of the importance of the researches which he had been bringing under their notice; as he had proved to the Committee of the House of Commons, that the cast iron pillars on which it stood were, by one-half at least, too strong for the weight they were called on to support.

The President requested Sir William Hamilton to read Mr. Anthony Peacock's communication 'On Recurring Decimal Fractions, and a new species of Logarithms.'—Sir WILLIAM HAMILTON said that in obedience to the request, he should communicate the principal point of the paper, which, however, he could not style a novelty. Having explained the general principles of Mr. Peacock's method, he observed that there was an eminent foreign mathematician then present (Prof. Jacobi) who would easily recognize the general theorems, of which the present were interesting particular exemplifications.—Prof. JACOBI remarked, that the theorems here stated had been fully discussed by Gauss in his Researches.

Mr. W. Walker's statement of his 'Observations on Oceanic Waves,' was then read by Prof. Stevelly.—After detailing the advantages which the locality where these observations were made (Bovisand, near Plymouth,) possessed for such an object, such as complete exposure to the waves of the Atlantic, a series of buoys at ascertained distances, well observed soundings, a tide gauge fixed at the pier, and elevated cliffs from which the waves in series may be conveniently observed, he presented in a tabular form the results of his observations made during the last winter. From these it would appear that the ratios between the heights, velocities, and other elements of waves, are not regulated by any constant law. On the 28th of September the waves were found to travel at the rate of 46 feet per second, being 460 feet apart, and breaking in five fathoms water; the next day their velocity was only 42 feet per second, their distance apart 442 feet, and the height of an unbroken wave 27 feet above the surface level. These waves were breaking in five and six fathoms. On the 1st of October the velocity of the waves travelling at right angles to the wind, was 46 feet per second, the distance between the waves was 345 feet, and their height only five feet. It was agreed to postpone the discussion on this paper until it had been examined by Mr. J. Scott Russell, and the Committee on Waves.

MONDAY.

SECTION B.—CHEMISTRY AND MINERALOGY.

Dr. Kane, of Dublin, took the chair.

Mr. JOHN DAVIES, of Manchester, then read a paper 'On the Manufacture and Purification of Coal Gas.' Besides the illuminating gases obtained by the distillation of coal, other gases are at the same time evolved, which are not adapted for the intended purpose. These gases are, carbonic acid and sulphuretted hydrogen. The latter is particularly objectionable both from its offensive odour, and from other noxious properties. A volatile hydrocarbon usually accompanies the coal gas, and adds materially to the illuminating powers. It is well known that its two former constituents are removed from coal gas, by means of lime; but if the purification be carried too far, the hydrocarbon is also removed. Dr. Ure had shown this in the case of olefiant gas, and Mr. Davies was able to testify to the accuracy of his experiments, and to extend the remark to other hydrocarbons, which are occasionally evolved. The best means of avoiding this loss of illuminating properties is, to employ a coal containing a smaller proportion of sulphur than usual. Mr. Davies then adverted to Mr. Phillips's patent for removing ammonia from coal gas, by passing it through a purifier containing a solution of alum. He had found it, on several occasions, perfectly successful. He then adverted to the origin of the ammonia obtained in the distillation of coal. He did not think that the quantity of nitrogen contained in coal could sufficiently account for its formation. The analyses of Regnault and Richardson have, however, shown that nitrogen is contained in notable quantity in all kinds of coal.

In the course of a conversation which followed this

paper, Mr. LEIGH, of the Manchester Gas Works, stated, that as much as two ounces of muriate of ammonia exist in one gallon of gas water.—Mr. WEST had examined many specimens of coal, and had never met one specimen free from sulphur. This sulphur was not always in combination with iron.—Mr. BLITH mentioned the curious fact, that in the water of a coal mine, which he had lately examined, a large amount of silicate of soda existed.

Dr. SCHUNK then read a paper 'On the Formation of Cyanuret of Potassium in a Blast Furnace,' by Dr. C. Bromeis, of Cassel.—M. Zincken discovered at the bottom of the blast furnace at Magesprung, in the Hartz Mountains, a mass which Dr. Bromeis found to contain ferro-cyanuret of potassium. The furnace, from which it was obtained, had been fed with charcoal. The other ingredients of the saline mass were, caustic potash, carbonate, silicate, and manganese of potash, together with a large portion of cyanate of potash, and cyanuret of potassium. It is probable that the ferro-cyanuret of potassium did not exist ready-formed in the mass, but was produced after dissolving the cyanuret of potassium in water. The cyanide of potash, by its decomposition, gives rise to carbonate of potash and ammonia. Dr. Bromeis supposes that the formation of cyanogen must have been occasioned in the following manner:—the nitrogen of the atmosphere, being exposed to a great pressure and high temperature, combined directly with the carbon of the carburet of potassium, producing thereby cyanogen and cyanuret of potassium. This explanation accords with the experiments of Defosse.

Mr. LEIGH read a communication 'On a new product obtained from Coal Naphtha.'—The substance described was obtained in the course of some investigations on an oil which Mr. Leigh discovered about three years and a half ago, as the result of a mixture of nitric and sulphuric acids on purified coal naphtha. In their behaviour with potash, both in aqueous and alcoholic solution, the crystals now brought under the notice of the Section by Mr. Leigh have much analogy with the oil (like that of bitter almonds) obtained at the same time with them. The oil, when extensively exposed to the action of oxygen, becomes a crystalline solid, having much the same appearance as these crystals. It is probable the crystals differ from the oil in containing a quantity of oxygen. Mr. Leigh had made no analysis of these compounds.

Mr. CROFT read the next paper, 'On Kakodylic Acid, and the Sulphurets of Kakodyl,' by Prof. Bunsen, of Marburg.—In the present paper, Prof. Bunsen examines the higher stages of oxidation of kakodyl, and the sulphurets corresponding to them. He finds that, by the oxidation of alkarsin, either by the direct action of the air, or by means of oxide of mercury, kakodylic acid is formed; but there is also an intermediate oxide, which cannot be obtained in a state of purity, which seems to be similar to the hyponitric acid, and to be a combination of kakodylic acid with the oxide. Kakodylic acid crystallizes out of alcohol; its composition is $C_4 H_4 As_2 O_3 + HO$, this atom of water being constitutional, and only to be replaced by a base; it is soluble in water, but not in ether. A very remarkable fact with respect to this body is, that the poisonous properties of the arsenic seem totally annihilated; eight grains administered to a rabbit exerted no poisonous action. Kakodyl combines directly with sulphur, forming the proto-sulphuret which has been already described. This compound takes up another atom of sulphur, and produces the bisulphuret. There appears also to be a tersulphuret analogous to kakodylic acid; Prof. Bunsen has not, however, been able to obtain it in a pure state. From the above results, it appears, that kakodyl is precisely similar in its behaviour to some simple metals, and the formation of kakodylic acid by direct oxidation, is in exact opposition to Dumas's theory of substitution.

Dr. SCHUNK read a paper 'On the Compounds of Carbon and Iron,' by Dr. C. Bromeis.—Dr. Bromeis analyzed various kinds of iron by burning them in a tube, with a mixture of chromate of lead and chlorate of potash. The combustion is conducted exactly like an organic analysis, and is the method invented by Regnault. An important point in the determination of the carbon in iron, is to ascertain the proportion of carbon in a state of combination, in contradistinction to that which is mechanically mixed with the metal.

Dr. Bromeis effected this by dissolving the mixture in muriatic acid; the carbon, in chemical combination, unites with hydrogen, and forms carburetted hydrogen, while the carbon, in mechanical mixture, takes no part in the action, but remains unaffected, and may be accurately determined. This quantity being subtracted from the whole carbon obtained by combustion, affords a means of estimating the quantity in chemical combination. Dr. Bromeis found in crystalline white cast iron, 3.8 per cent. of carbon. But, as some white cast iron has been found to contain 4.2, or even 5.3 per cent., Dr. Bromeis considers, that manganese may be substituted for it; he sometimes found as much as 7 per cent. of this metal. It appears, therefore, that neither common nor white cast iron are polycarburets of determinate constitution. In white cast iron, Dr. Bromeis found only 0.5 per cent. of mechanically combined carbon, in other kinds nearly 1 per cent., and in grey cast iron 2.3 per cent. Hence it follows, that the chemically combined carbon amounts only to 0.9 per cent. Karsten found 0.85 per cent.; cast steel, according to Gay-Lussac and Wilson, contains 0.93 per cent. carbon. Bromeis found in hard cast steel 0.97 per cent. Grey cast iron may be considered as a mixture of very impure cast steel with carbon. This may possibly be the cause that it can be so easily hardened on the surface.

The next paper was by Mr. RICHARDSON, 'Contributions to the history of the Magnesian Limestones.'—The author, considering the great importance of the magnesian limestones, both to the manufacturer and agriculturist, conceived that an account of their composition might prove acceptable. He examined the various limestones systematically, according to the excellent arrangements of Prof. Sedgwick, and collected the results of his analyses in a tabular form. The insoluble residue of the specimens subjected to analysis, contained, in every case, organic matter. The analyses proved a very great variation in the quantities of lime and magnesia; a fact which will not surprise the chemist when he considers that they are isomorphous, and therefore capable of mutual replacement. Mr. Richardson argued, that the deposition of the lime and magnesia must have been effected simultaneously, from the fact of layers of limestone existing above and below the magnesian limestones, in which layers no magnesia can be detected. He was inclined to ascribe their deposition to the influx of waters holding chloride of magnesium in solution, which, meeting with calcareous matter held in solution, by an excess of carbonic acid, robbed it of that excess, and the two carbonates of lime and magnesia fell together.

Dr. KANE remarked that Dr. Apjohn had examined some Irish Dolomites of the magnesian limestone, and had found the carbonates of lime and magnesia in atomic proportions.—Mr. CROFT stated, that he had observed the same fact in analyzing specimens from Saxony and other countries.

SATURDAY.

SECTION C.—GEOLOGY AND PHYSICAL GEOGRAPHY.

'On the Fossils of the Carboniferous Limestone of Ireland,' by R. Griffith, Esq.—The substance of this communication had already been printed by Mr. Griffith for distribution amongst the members of the Association; it was accompanied by a catalogue of all the fossils yet discovered in each of the subdivisions of the Irish mountain limestone series, in the strata of North Devon, and in the mountain limestone of Great Britain, arranged in parallel columns for the purpose of comparison; the notice was also illustrated by coloured sections.

Mr. GRIFFITH stated that his object in this communication was to prove, by the evidence of fossils, that the lower members of the mountain series of Ireland, as arranged by him, really belonged to that series, and not to the old red sandstone, as advocated by some geologists. He described this series as containing two great bands of limestone, which he had denominated the *upper* and *lower limestones*; interposed between these limestones were beds of shale, argillaceous limestone, and sandstone, forming a series of great thickness, known by the name of *calp* or *calp slate*. Beneath the lower limestone was a second series of schistose beds, to which he had given the name *carboniferous slate*; under the slate was a series of sandstone beds, frequently intercalated with slate or shale,

and occasionally with limestone; he had denominated this deposit the *yellow sandstone*; its lower beds rested conformably on the old red sandstone. Mr. Griffith stated, that those beds varied in thickness at different localities, but that the relative position of each member of the series was always the same; the upper and lower limestones were generally more persistent than the other members of the series. In some localities the carboniferous slate and yellow sandstone were altogether wanting; in others the carboniferous slate only was absent, the lower limestone resting directly on the yellow sandstone. In the northern and middle districts of Ireland, the *calp* formed a very thick and important member of the series, but gradually thinned out towards the south; it had not yet been discovered in the counties of Cork and Waterford, and was only occasionally traceable in Clare, Limerick, and Kerry. In the middle district, the upper limestone formed the distinguishing feature; in the southern section, the upper and lower limestones were most abundant, and the *calp* least so, whilst the carboniferous slate and yellow sandstone occupied an inconsiderable superficial extent, but were important, as they contained a great variety of fossils. The carboniferous slate of the south of Ireland differed considerably in lithological character from that of the middle and northern regions, but the number of fossils common to the beds which occupy the same geological position in all three districts, showed the necessity of including the whole in one division. In the tables of fossils before mentioned, the occurrence of each species in the different members of the Irish series, was indicated for each of the three districts, and also their occurrence in North Devon, and in the English mountain limestone. From these general tables, Mr. Griffith had prepared tables of results, showing the number of fossils of each class occurring in every division of the mountain limestone of Ireland: those peculiar to it, those common to it, and all the other members of the series, those that are common to each of the other divisions, and also those that are common to the mountain limestone of Great Britain, and to North Devon. Some of the results obtained were as follows: *Yellow sandstone*, out of 122 fossils, 9 were peculiar to it: 113, or 92½ per cent., common to the mountain limestone of Ireland generally; 49 species, or 40 per cent., common to the upper limestone; 87, or 71 per cent., to the *calp*; 75, or 61 per cent., to the lower limestone, and 94, or 77 per cent., common to the carboniferous slate, 35 species, or 30 per cent., were common to North Devon, and 59, or 48 per cent., to the mountain limestone of Great Britain.—*Carboniferous slate*, of 275 fossils, 12 were peculiar to it: 263, or 95½ per cent., common to the mountain limestone of Ireland generally; 99, or 36 per cent., common to the upper limestone; 176, or 64 per cent., to the *calp*; 162, or 60 per cent., to the lower limestone; and 94, or 34 per cent., common to the yellow sandstone; 65 species, or 24 per cent., were common to North Devon, and 139, or 50 per cent., to the mountain limestone of Great Britain. From these data Mr. Griffith concluded, that the yellow sandstone, which contained 92½ per cent., and the carboniferous slate, which contained 95½ per cent. of fossils common to the other members of the mountain limestone of Ireland, must belong to that series. Mr. Griffith next proceeds to consider whether the mountain limestone of Ireland generally, should be classed with that of Great Britain. By the table of results it appeared, that out of 180 species of fossils obtained from the *upper limestone*, 133, or 73 per cent., were common to the British mountain limestone; of the *calp*, out of 267 species, 148, or 55 per cent., and of the *lower limestone*, out of 391 fossils, 234, or 60 per cent., of the carboniferous slate 50 per cent., and of the yellow sandstone 48 per cent., as already mentioned, were common to the British mountain limestone; and if the entire series were taken, it appeared that out of 430 species which had been described as occurring in that series, 287, or 67 per cent., were common to the mountain limestone of Ireland. Hence he concluded, that the mountain limestones of Great Britain and Ireland belonged to the same geological suite, though the Irish series generally, and particularly the lower members, contained a great number of species, which had not hitherto been discovered in the British. From the foregoing data there appeared to be a greater affinity between the upper limestone of Ireland and

the British mountain limestone, than between it and the other members of the Irish series. Again, the upper limestone of Ireland contained only 16 species of fossils, or 8 per cent., which were common to North Devon, while the *calp* contained 43, or 16 per cent., the lower limestone 39, or 10 per cent., the carboniferous slate 65, or 24 per cent., and the yellow sandstone 35, or 29 per cent., in common with the same series. Thus there appeared to be a nearly regular gradation from the upper portion of the mountain limestone of Ireland into the upper Devonian; and although, owing to the predominance of ordinary mountain limestone fossils, the percentage is not considerable even in the lower members, yet by reference to the table of results it appeared, that out of 122 species of fossils from North Devon, 80, or 65½ per cent., occurred in the mountain limestone of Ireland; and hence Mr. Griffith concluded, that hardly a doubt could be entertained as to the propriety of attaching the fossils of North Devon to the mountain limestone series of Ireland. He considered this a startling result, and one which could not have been foreseen from our previous knowledge of the fossils belonging to the British mountain limestone, which contained only 22 species common to North Devon, and made the conclusion of some distinguished geologists as to the separation of the Devonian system from the mountain limestone, perfectly legitimate, even as regarded the *northern* portion of the district. Mr. Griffith observed, that this comparison between the mountain limestone and the Devonian fossils had been confined to those of North Devon. By a similar comparison with South Devon, the results were essentially different, inasmuch as out of 257 species of fossils obtained from that district, only 94, or 36 per cent., were common to the mountain limestone of Ireland, and 26, or nearly 11 per cent., to that of Great Britain—a result which led to the conclusion, that the fossils of South Devon generally belonged to a different, and, judging from the type of the fossils, to a more ancient period than those of North Devon, though possibly a portion adjoining the culm series might eventually be found to correspond with the period of North Devon. The fossils of North Devon were given in these tables as described by Mr. Sowerby, Mr. Lonsdale, and Mr. Phillips, and those of the mountain limestone of Great Britain, by Mr. Sowerby and Mr. Phillips. In regard to the fossils of the mountain limestone of Ireland, nearly the whole of the fossils named in the table had been obtained by, and were in the collection of, the author; of the 568 species which it contained, 166 were supposed to be new by Mr. McCoy, of Dublin, who had examined and named them. Mr. Griffith stated, that the collection also contained upwards of 100 additional new species, which were under examination, including several species of Entomostraca, from the *calp* of Bundoran, in the county of Donegal, the lower limestone at Armagh, and the carboniferous slate at Howth, in the county of Dublin; numerous remains of fossil fish had also been collected, but they had not yet been sufficiently examined to be named and introduced in the catalogue. Mr. Griffith observed, in conclusion, that these investigations must still be considered as in their *infancy*; the collection from the upper limestone was particularly deficient, which had arisen from the circumstance of the district containing the best development of that member of the series being situated near the summits of elevated crags, where no quarries had been opened; and every geologist was aware of the difficulty of collecting a good suite of fossils under such circumstances.

Mr. SEDGWICK adverted to the evidence upon which he and Mr. Murchison had proposed the separation of the Devonian system, and assigned its place in the series; the organic remains of these strata had been proved to exhibit, as far as they were known, an intermediate character between the fossils of the carboniferous limestone and those of the Silurian system; they knew of no other rock intermediate between those formations, and accordingly, at Mr. Lonsdale's suggestion, they placed them in the parallel of the old red sandstone. They had fallen into some errors in their first examination of the Devonian strata, which had been corrected; but there was one point on which they had returned to their first opinion, this was with respect to the age of the Petherwin beds, which they had considered older than the strata of North Devon; subsequently, having

found so like those placed there with some very low rocks, they had to their Petherwin North Devon intermediate ferrous are to be shown mations dence wh he had velopem in some feet in the England thick. I was shown the beds Griffith's Mr. Sedgwick of all just proved, beds of better more type the rock limestone an exten mentione stone gri limestone localities were fore after ge occurred tion of ad justm which the ness of th to identify posits, fo old red s mineral o relied on change c wards, co age of a evidence consisti limestone the equi The circ combinati bility, the at the sa son of th would be series we carbonife were abs the serie forms ap paring th into whet different, Griffith h the fossil found in to that of the two fossils wh in the F might ye some diff portion o land. It and all Ireland, would be were com conviction with ever

found some long-winged spirifers at Petherwin, very like those of Tintagell, they retracted this view, and placed the Petherwin beds as the representatives of those at Barnstaple; now, having found that spirifers, with similar characters to those at Petherwin, occurred very low down in the series, and even in the Silurian rocks, they had, for this and other reasons, returned to their former views, and were disposed to regard the Petherwin beds as generally older than those of North Devon. The fossils of North and South Devon as a group, having been proved to exhibit an intermediate character between those of the carboniferous and Silurian strata of England, it remained to be shown how far the representatives of these formations in Ireland could be brought into correspondence with them. In his visit to Ireland last year, he had an opportunity of seeing the magnificent development of their lower carboniferous series, which, in some places, had been proved to be at least 5,500 feet in thickness, whilst the great scar limestone of England was, perhaps, never more than 700 feet thick. In the south of Ireland the old red sandstone was shown in sections to attain a great thickness, and the beds of the carboniferous series, ending with Mr. Griffith's yellow sandstone, were seen resting upon it. Mr. Sedgwick contended, that sections were the basis of all just reasoning, as from them were derived all knowledge of the laws of organic life. Now it was proved, both by sections and fossils, that the lower beds of the carboniferous series of Ireland were much better developed than our own, and consequently, more typical; he would, therefore, be willing to unite the rocks of North Devon with the carboniferous limestone, if such an arrangement agreed better with an extended acquaintance with those deposits. He mentioned the occurrence of coal beds in the millstone grit, and lower than part of the carboniferous limestone of Scotland, as illustrating how in some localities the conditions under which certain deposits were formed, might be continued longer, or repeated after greater intervals than appeared to have usually occurred.—Sir H. DE LA BECHE hoped the acquisition of so much new information would facilitate the adjustment of the Devonian rocks with the series to which they belonged. He considered the mere redness of the rocks in the south of Ireland insufficient to identify them as the basis of the carboniferous deposits, for the Cambrian rocks of St. David's and the old red sandstone neither differed in colour nor in mineral composition; whilst, therefore, sections were relied on for evidence of superposition, the gradual change of organic life, from the lowest deposits upwards, could alone indicate with certainty the exact age of any deposit.—Mr. PHILLIPS adverted to the evidence on which a certain series of rocks in Ireland, consisting of coal and shale, arenaceous rocks, and limestone, resting on red sandstone, was considered the equivalent of the English carboniferous system. The circumstances occurred in the same order, the combination was the same, so that there was a probability, though not certainty, that the deposits occurred at the same time. This being admitted, the comparison of the fossils was of the next importance; and it would be seen, that in the lowest strata of the Irish series were some forms occurring also in the English carboniferous limestone, whilst many other characters were absent, or had not yet been found; rising up in the series, other combinations, types, and individual forms appeared; it was important, therefore, in comparing the strata of a known geological age, to ascertain whether the organic remains were the same, or different, and in what degree they differed. Mr. Griffith had shown, that a considerable number of the fossils of the Irish series were the same as those found in England, and he had made some additions to that test; but with respect to the relative richness of the two deposits, he believed that when all the new fossils which Mr. Gilbertson and others had discovered in the English mountain limestone were added, it might yet exceed the Irish catalogue, and probably some differences would be found in the relative proportion of the groups of forms in Ireland and England. If 500 species should be found in England, and all of them agreeing specifically with those of Ireland, the proof of the identity of the deposits would be conclusive; but if only 400 of these species were common to the two countries the nature of the conviction changed, and it diminished continually with every reduction in the number of identical forms.

Mr. Griffith had compared the numerical distribution of fossils in the several Irish groups with those of all Ireland, and it would be found that not only did they differ in this respect, but also in the character of the fossils; for instance, *Posidonia*, which were generally rare in England, but abundant in Devonshire, were now found in Ireland, occupying a position which could be determined; another fossil, unknown in the limestone series of England, but occurring in the lower groups of Devon, the *Calceola sandalina*, had, in Ireland, been found above the carboniferous slate in the limestone of Dungarten. Mr. Griffith's conclusions, derived from a numerical comparison of the fossils of Ireland with those of North and South Devon, were entirely in harmony with his own respecting the comparatively modern date of the strata of North Devon; but he believed that not half the fossils of North Devon were yet known, and the comparison was still very imperfect. With respect to the new species of mountain limestone fossils enumerated in Mr. Griffith's list, he thought that probably some of them, the spirifers for example, were not specifically distinct from those previously described, and the number of new species found in Belgium, and described by M. Kôminek, and other foreign authors, would make it necessary to compare them with the new species in Mr. Griffith's tables, before they were published.—Dr. FLEMING remarked, that the similarity of many fossils found in the graywacke, old red sandstone, and carboniferous limestone had been noticed many years ago; but he was not disposed to attach much importance to the per-centage system, as a means of grouping them; the fossils of the same bed might vary exceedingly in quarries opened at different localities. He stated that a section taken in the middle district of Scotland, showed the coal measures resting on beds of marine limestone, usually considered the fundamental deposit; but coal deposits were found under this limestone, and if such were the case elsewhere, they might be mistaken for the representatives of the yellow sandstone. In the northern part of the great coalfield of Scotland, the limestone, shales, thin coal seam, and beds of ironstone, rested on yellow sandstone (perhaps the representative of that in Ireland), passing down into the old red, remains of the *Holoptychius* being common to both.—Mr. GRIFFITH stated, that, as his percentage was founded on an examination of fossils from all parts of Ireland, he considered it very free from errors arising from local distribution of the organic remains.—The Rev. DAVID WILLIAMS observed, that it had been his intention to offer a communication on the subject of some remains of fossil fish found by him near Bristol, but as the subject was intimately connected with the object of Mr. Griffith's paper, he would submit those observations at once. The remains, as far as he could determine them by M. Agassiz's work, consisted of palates of *Cochliodus contortus*, *Helodus simplex*, *Psammodus turgidus*, *P. cinctus*, and *P. reticulatus*, all mountain-limestone species. They occurred in a grey crystalline limestone, and a subordinate thin stratum of red conglomerate, containing shells identical with those in the limestone. He had been particularly anxious to ascertain whether there was any evidence of a passage from the limestone down into the old red conglomerate, but beyond an apparent conformity there was no evidence of the kind, "it was all a hard junction," and presented nothing like the alternations of deposits he had been accustomed to witness between the culm and killas of South Devon and Cornwall. He then pointed out the occurrence of a similar coarse red conglomerate, about ten feet thick, on the south bank of the Avon, which appeared to him much in the same position with the great conglomerates of Herefordshire and Pembroke, sometimes 200 feet thick; he also referred to the wide distribution of a conglomerate described by Mr. Phillips in his work on Yorkshire, as forming the basis on which, in every instance the alternations of the lower beds of mountain limestone and old red sandstone rested. From the wide diffusion of this conglomerate, Mr. Williams inferred that it represented a considerable period of time, during which the Devonian series might have been deposited; he believed that series to occupy a position intermediate between the old red sandstone and the mountain limestone, but sufficiently important to form a system by itself,—views which he contended he had proved

in the London and Edinburgh Philosophical Journal of February last. He considered that all the evidence had not been taken into account in the computation by which Mr. Griffith had arrived at those results, and he was thus enabled to bring the strata of North Devon into a closer comparison than they would be with those of Ireland. With the exception of transition types, he regarded the fossils of the Devonian system as equally independent of the mountain limestone and the old red sandstone.—Mr. MURCHISON remarked the striking analogy between the rocks and fossils of the carboniferous system of Ireland, and that of Russia, the deficiency of the coal measures, and the excessive development of the lower beds. He believed that some of the fossils of the Irish mountain limestone, as for instance *Producta aculeata*, occurred also in the zechstein of Russia.

* On the Microscopic Structure of Coal, by John Phillips, Esq.—Mr. Phillips observed, that there was now no difference of opinion as to the vegetable origin of coal, but only as regarded the circumstances under which those vegetable masses were accumulated. In order to determine this, several modes of investigation might be followed, one of which was to examine the coal itself, in order to ascertain the nature of the plants of which it was composed. In the microscopic examination of polished slices of coal, by means of transmitted light, some results had been obtained by Mr. Hutton, of Newcastle; these observations had not been published, but he believed Mr. Hutton had detected a cellular structure in the substance of the Northumberland coal, which at first sight might be imagined vegetable cells. These cells had been supposed to contain much, if not all the gas of the coal; and in this respect the Northumberland coal differed from the anthracite, in which the cells were empty. It had been his intention to employ some of the ingenious processes recommended by Mr. Reeve, who had discovered the means of making fossil vegetable tissue apparent to the senses by a process of combustion, but having lately observed something remarkable in the combustion of Staffordshire coal, he was induced to examine it microscopically, without waiting to adopt any more refined process. He observed that the ashes of wood and peat differed in appearance and structure; and this Staffordshire coal, which did not cake, but burned to a white ash, resembled in its combustion the laminated peat of the north of England, or the compact black peat of Dartmoor. Upon examining these ashes, he found abundant traces of vegetable structure, consisting of small portions of woody tissue imbedded in other tissue, apparently of plants much lower in their organization. He had also detected traces of structure in the ashes of anthracite coal received from Sir H. De la Beche. Mr. Phillips considered this evidence rather in favour of the view that coal was in a great measure formed by plants growing on the spot, and not by drifting; the evidence of such drifting was formerly much stronger impressed upon his mind, but he had met with many phenomena, and this amongst them, which tended very much to diminish the force of his former conclusions.

Mr. WILLIAMSON 'On the Origin of Coal.'—In this communication the author had collected all the principal facts and phenomena bearing upon the origin and formation of coal, with the view of proving it to have originated in the drifting of vegetable matter into the sea, and not by the accumulated growth on the same spot now occupied by the coal. The strata separating the coal seams were described as consisting of a great variety of rocks, from the coarse deposits and water-worn pebbles of the lower grits to the fine-grained shales and limestones of Ardwick; they were acknowledged by all to have been sedimentary in their origin, containing the remains of aquatic shells and animals. In many of these strata, as at Colebrook Dale, the scales and other remains of megalichthys were found abundantly associated with orthoceratites, goniatites, nautilus, and a variety of other shells whose marine character had never been doubted; in the coal-measures of Yorkshire *Pecten papiraceus*, several goniatites, several species of *afagus* allied to *Modiola*, Lingulae, crustaceans allied to the recent marine genera *Cyamus* and *Cymothoa*, were found, with remains of megalichthys, *plœonicus*, *platysomus*, and other fish. The abundance of shells

commonly considered Unionidae, did not, in the author's opinion, militate against the marine origin of the former, as Dr. Fleming mentions having seen the dead shells of Unios, with their valves still united by the ligament, in abundance at Mount Vernon on the Potomac, and at Montmorency on the St. Lawrence, both placed where the tide flows; and Mr. Williamson inferred that if the current could carry them so far, some might also reach the estuaries of those rivers, and become mixed with marine remains. He then described the conditions under which vegetable remains, such as *Halonis regularis*, calamites, sigillaria, stigmaria, lepidodendra, and the fruit of trigonoparpon, were found imbedded in the coarse grits and solid sandstones of the Halliwell quarries and Peel. These remains had all lost their stalks or foliaceous appendages, and were so intimately a part of the sandstone, that if one was drifted the other must have been transported in the same way. In the beds of shale unconnected with coal, large accumulations of plants were often found occasionally mixed with Unionidae and minute Entomostraca, presenting the appearance of having been thrown down together, after floating about in the water; the author considered these layers only differed in amount from the coal-seams; in one case a large and dense mass of vegetable matter had formed the material of a bed of coal, in the other the fewness of the plants and their intermixing with mud, now forming the shale, had limited the process to the conversion of each plant into a thin layer of carbonaceous matter. The author attributed the scarcity of fish-remains in the coal itself to the action by the same chemical process which had converted the accumulated vegetables into coal; the occurrence of scales of *Megalichthys* in the canal coal of Dixon Green and Wigan, he attributed to some peculiarity in its origin or composition more favourable to their preservation. The absence of the usual coal-measure plants in the fire-clay underlying the coal proved, in the author's opinion, a want of any connexion between the two; and he was disposed to adopt the view of those who regarded the stigmata of the fire-clay as a marine, or at least aquatic plant, growing in those estuaries in which the drifted vegetable remains of the higher country would be sunk, and form a deposit of coal over them; but he observed, that, although coal rarely occurred without this subjacent layer of stigmata, yet the latter was frequently found independent of coal. The author proceeded to state that he considered another proof of the drift origin of coal and associated beds in the disjointed and fragmentary condition of the fossil ferns and other plants, and the almost universal absence of their rhizomas and roots, which he stated he could only account for by supposing the remains had been long exposed to the action of water in rapids and violent currents. The absence or rarity of distinct traces of fructification was also an argument in favour of their being drifted, as, in the oolitic deposits of Gristhorpe Bay, which afforded evidence of comparatively tranquil deposition in fresh water, the fronds were not merely grouped together by their rhizomas, but afforded frequent indications of fructification. The prevalence of fine-grained shales immediately over coal-seams was, in the author's opinion, highly unfavourable to the theory which accounted for the origin of coal by subsidences; for if a sudden subsidence had taken place a deposit of water-worn pebbles would have been strewn over the coal, indicating the violent action of aqueous currents; and if the submergence were slow and gradual, the plants, as before argued, would be found much more perfect, as any currents sufficient to tear up the vegetation would also strew the surface with detritus; the absence of unconformability in the members of the coal-measure was also hostile to the idea of partial depressions. The argillaceous partings, which constantly occurred in coal-seams, also favoured the supposition of a considerable amount of drifting. Mr. Williamson concluded by attempting to explain the upright position of the trees at Dixon-fold on the Bolton Railway, without having recourse to the supposition that they grew on the spot; one of these trees was described by Mr. Bowman as having its base raised fifteen inches above the surface of the coal, the roots only being in contact, which Mr. Williamson considered could not be accounted for by any condensation of the vegetable remains afterwards constituting the coal-seam. One of the largest

of these trees presented no trace of roots, which were more likely to be preserved than any other portion. As to their erect position, he considered the weight of their strong branching roots, would be sufficient to maintain them erect in water until a deposit of sediment and drift should accumulate round their bases; whilst the absence of trunks inclined at various angles might be accounted for by pressure, which would soon reduce all that were not absolutely vertical to a horizontal position. One of the greatest objections in the author's mind to the drift theory was, the great extent and uniformity of some of the thin seams of coal, especially in the lower measures; he thought, however, the accumulation of vegetable remains in which these seams originated might have been as great as in many of the larger coal-seams, but that in the chemical changes which they had undergone a larger proportion of the gaseous elements had escaped, which would besides account for the general uniformity in their thickness. He also mentioned the laminated appearance of peat-bogs in the vicinity of Manchester, as exhibiting an illustration of the structure of coal favourable to the hypothesis which he had been combating; but as the true explanation of the phenomena was the only end he sought, he professed himself ready to accept that view if the difficulties attending it could be explained on rational grounds.

SATURDAY.

SECTION D.—ZOOLOGY AND BOTANY.

“On the different species of Cotton Plants and the Culture of Cotton in India,” by Prof. Royle.—The author observed, first, that plants yielding true cotton were natives both of the Old and New World. India, for instance, produced two species:—1. *Gossypium arboreum*, or tree cotton, with red flowers, little cultivated, though yielding a fine silky cotton; 2. *G. herbaceum*, the herbaceous or common Indian cotton, of which there were several varieties, including the Dacca cotton, and which had been spread from India to the south of Europe. There are also two distinct American species:—3. *G. Peruvianum*, or *acuminatum*, which yields the Brazil, Pernambuco, Bahia, &c. cottons; 4. *G. Barbadosense*, so called from having been early cultivated there. It is the same as the Sea Island cotton, and was long since introduced into the Islands of Mauritius and Bourbon. From an examination of specimens and coloured drawings this species appeared to be identical with the short staple or Georgian cotton, and also with the New Orleans cotton, which is said to have been obtained from Mexican seed; and this would appear to be the native country of this cotton. There may be other species of *Gossypium* in Africa and China, but we are without sufficient evidence on the subject, and the above appear to yield all the commercial cottons. Dr. Royle then proceeded to observe that the Indian cottons were usually low in price from inferiority in length of staple and defective cleaning, but that they had some useful properties, such as a good colour, taking dyes easily, and swelling in the process of bleaching, by which the cloth looked more substantial. He then contrasted the culture in America with that in India, and found that they differed in every respect, the American being more of the nature of garden culture, each plant being individually attended to in the processes of ploughing, hoeing, weeding, heaping earth round it, and sometimes in pruning, besides great attention in picking, drying, and cleaning the cotton from its seeds; in all which the Indian processes differed in being exactly the reverse. It would be remarkable if attempts had not been made to improve the culture of cotton in India. In fact, the Directors of the East India Company called the attention of their officers in India to this subject as early as 1788. They sent out seeds, instructions, machines, and even an American, Mr. Metcalf, to teach the use of these, and established farms for the improved culture of cotton in 1811, 1818, and lastly in 1829. These are usually stated to have been failures. This the Professor denied, since good cotton had been produced and the culture was considered profitable, and only required planters to take it up on their own account. The American cotton is also said to degenerate in India. This too he considered incorrect. The Bourbon cotton, which is the same kind as the Sea Island, had been introduced into Tinnevely, in 11.9° N. lat., and Mr. Hughes

continued to send it to the Liverpool market for a series of years, of good quality, and always obtained a higher price than any other cotton from India. But without careful culture cotton will deteriorate in America quite as readily as in India. Notwithstanding these apparent failures, the Court of Directors of the East India Company determined upon making another great experiment, which should be sufficiently complete to set the question at rest. As is well known in Manchester, Capt. Bayles was deputed for this purpose, and took with him ten experienced planters of cotton, as well as the requisite implements and machinery. The results of their experiments in the first year Dr. Royle then proceeded to relate, chiefly from letters addressed to himself and the Proceedings of the Agricultural Society of India. The Bombay experiment, he was sorry to say, had been a failure; but, in fact, it had not been fairly made. The planters destined for Bengal did not reach their destination until March of last year, and had little time for choosing eligible sites and getting settled in their farms, as sowing usually commences in the middle of June, after the rains have set in. This year they did not begin until the 20th of July, and lasted only six weeks instead of three months, as usual; but still, with this and other disadvantages, the experiment may be considered decidedly successful, inasmuch as though the quantity of cotton is small, its quality is good, and it is well cleaned; and the planters consider that the culture will be decidedly profitable, as cotton can be produced cheaper than in any other part of the world. The above experiments having been carried on in 27° of N. lat., it is interesting and extremely important to find that a like result has attended those undertaken in the Madras Presidency, in the district of Coimbatore, in about 12° of N. lat. The planters were first sent to the Tinnevely district, and afterwards removed to their present localities; so that in this way some time was unfortunately lost. Their experiments were made both with New Orleans and the native seed, and in both the black and the red soil. The season here seems to have been at first untoward, apparently from the great dryness of the weather, as the accounts received by the January mail were of an unfavourable nature. But in a subsequent letter, dated 17th of April 1842, the superintendent stated that he considered the experiment to have completely succeeded, as the plants had thrown out fresh leaves and flowers, and that the bolls had set, ripened, and produced good cotton; so that if next year should prove but moderately favourable, they will be enabled to send nearly if not quite 1,000 bales of American cotton.

Dr. STANGER stated that he had observed the cotton plant in Africa, but not anywhere cultivated. Cotton fabrics of all kinds were made by the natives, of which he exhibited specimens, and the cotton plant must be somewhere raised in large quantities. The Niger expedition had taken out a large quantity of the seeds of the New Orleans cotton, which were now planted at the model farm on the Niger.—General BUGGS calculated, from accounts which he had received from India, that in some parts of the north-west coast, the farms produced 700 or 800 lb. per acre. He hoped that a want of success in the south of India would not lead to the abandonment of its cultivation in the north. The northern parts were also best, as the land-tax was settled there for thirty years.—Mr. GARNETT stated, that he had examined the specimens of cotton produced by Prof. Royle, and believed that no better cotton could be brought to the English market than that marked in the specimens “Red soil, New Orleans,” and which Prof. Royle had stated was grown at Cawnpore.—Mr. BAZLEY said, that the best cottons brought to Manchester were those from the vicinity of the sea coast: he would throw out the hint, as to whether a saline atmosphere had any influence on this circumstance. Would not Lougha Island be a good spot, on this account, for the growth of cotton?—Gen. BRIGGS stated that experiments had been made at Lougha Island, and with success.

Mr. H. E. STRICKLAND exhibited a specimen of *Halcyon Smyrnenis* (Linn.), transmitted from Asia Minor by Mr. Edward Forbes. This species, described by Albin more than a century ago, from a specimen procured at Smyrna by Consul Sherard, appears not to have been subsequently noticed on

the shores of the Mediterranean. The present specimen is, therefore, of interest, both as verifying the general accuracy of Albin's description, and because it is proved to be specifically identical with the Indian bird figured in Buffon's Pl. Enl. 894, which some ornithologists have supposed to be distinct.

Mr. DEWBAIN exhibited the downy fruit of the Black Poplar. It was the produce of a tree that had not hitherto borne fruit, and he had heard of several trees having this year produced fruit in like manner. He wished to know if any use could be made of it.

—Dr. LANKESTER said, the down was too short to allow of being manufactured in cloths, even if the texture of the tissues of which it was composed would allow of it. It was well not to plant these trees near houses, as this down blowing about was frequently a source of great annoyance.

Mr. PEACH exhibited a collection of Shells in their various stages of growth; also some new species of poriferous animals, one of which, recently discovered, had been named by Mr. Couch after its discoverer, *Fuista Peachii*.

Dr. LANKESTER drew attention to a microscopic animal that had been found the day previous in the Botanic Garden, covering the stems of the *Chara filicilis*, and giving them a loose gelatinous white appearance. The moment they were touched this character disappeared, from some contractile power possessed by the animal. Mr. Alder had examined the animal alluded to, and found it to be a very large species of *Vorticella*, which he had never before seen. The bell-shaped summits of the animal were visible to the naked eye.

MONDAY.

SECTION E.—MEDICAL SCIENCE.

THE SECRETARY read a paper 'On a general law of Vital Periodicity,' by Dr. LAYCOCK.—The object of the paper was to establish, by induction, a law of periodicity, with a term of *seven days*, pervading the entire animal kingdom, and influencing the pathological manifestations of disease in man; the facts brought forward for this purpose were derived from periods of gestation, or of hatching, in fishes, reptiles, birds, and mammals, from the transformations of insects, the effects of morbid poisons on the animal economy, particularly illustrated from malarious and exanthematic diseases, typhus fever and gout, and even chronic diseases: in all of these classes of facts a periodical movement is found pervading the entire animal kingdom, with a strict reference to seven days or its submultiple or multiple. Of the numerous facts stated, the following are examples: of 129 species of birds and mammals, whose period of incubation, or uterogestation, was examined, in 67 the period was a definite number of weeks or months, 24 were within one day of being so, and in the remaining 39 the period was so loosely stated as not to be of much weight for or against the general law. The author stated, that the most remarkable confirmations and illustrations of the law were to be found in insects by observing the periods observed in, 1st, the hatching of the ova; 2nd, the caterpillar or larva state, and the moults which take place in this stage of development; 3rd, the pupa, or chrysalis period, and 4th, the imago state, or puberty. Numerous examples from these conditions in many species were given, in all which the period of seven days, or its simple multiple, was traced. The phenomena of disease in man were examined, particularly small pox, as the best example of the exanthemata, of intermittent fevers, and of gout; and the author endeavoured to show, that the stages, the principal changes, and the duration of these diseases were governed by the same law, which really afforded the grounds for the establishment of the critical days of Hippocrates; of these days the most important being the seventh, fourteenth, and twenty-first, and the next in importance being the fourth, eleventh, and seventeenth, the half periods. These periodical changes were to be traced in chronic disease also; the prevailing doctrine of "septennaries" amongst the ancient physicians was founded on similar observations, and the fact of vital periodicity is assumed by them as if it were too well known to be doubted. The author extended this law of periodicity to health and the performance of healthy functions; and this, he contended, threw light on the subject of the latent periods of disease. This

law was observable, also, in an entire population, as might be seen in epidemics.

'Remarks on Diabetes Mellitus,' by C. CLAY, M.D.—The author endeavours to show that this disease arises from debility, and recommends the tonic and astringent treatment of it.

SATURDAY.

SECTION G.—MECHANICAL SCIENCE.

Mr. G. W. BUCKE read a paper 'On the Pressure of Earth against Walls.' He observed that much of the work of a civil engineer had reference to the pressure of earth. The most common case was in retaining walls, such as dock walls, wing walls of bridges, &c., where the surface of the earth is level with the top of the wall. The force with which the earth pressed against a wall, under these circumstances, had been proved by M. PROUVY; but PROUVY's solution only applied to this particular case, and as many others occurred in practice, he proposed to investigate nearly all such based upon PROUVY's principle. The first case which he should consider was when the earth had an ascending slope backwards from the top of the wall, as when a wall was built in front of an embankment, excavation, or tunnel: here the wall has to support the additional weight of a portion of the slope. M. PROUVY demonstrated that the angle of maximum thrust, which is formed by the wedge of earth, bisects the angle formed by the back of the wall and the natural slope of the earth or angle of repose. But he found that when the earth rose backwards from the top of the wall, that walls built in accordance with this investigation were too weak, as the angle of maximum thrust became greater, and the momentum deduced from it is much increased. For distinction, he would call those walls, whose tops were level with the surface of the earth, *retaining walls*, and where the earth rose above, he would call them *sustaining walls*. It was desirable to investigate the resistance offered by the earth to displacement, when a rigid vertical plane was thrust against it, as is extensively applied where the stability of abutments of bridges is made, for economy, to depend on the resistance of the earth behind them; here the pressure would manifestly cause a rupture in the earth, and force a wedge of it upwards, and it was curious that the angle at which this was ruptured, or the angle of least resistance, was the same as that given for the maximum thrust by PROUVY, i.e. half the complement of the angle of repose. The next case which he would investigate, was when an arch was sprung from the top of a wall (as in a tunnel) thereby retaining the top of the wall rigid. To estimate the horizontal thrust against the wall below the spring of the arch, when the entire height behind the wall was filled up with earth to the level of the top of the roof of the arch, there were two masses of earth to be considered, the wedge of earth acting against that portion from the top of the wall up to the top of the arch; and, secondly, the quadrilateral figure left when this wedge was subtracted from the entire wedge from the foot of the wall to the top. It was the thrust of this latter portion which was to be considered, and its horizontal thrust was equal to the horizontal thrust of the entire wedge, minus the horizontal thrust of the wedge above the top of the wall, minus the friction on the base or line of rupture of this latter wedge. This could be found easily for any particular case, but it was desirable to find the proper height from which to spring the arch, so that the friction on the rupture lines of the two wedges should neutralize the horizontal thrust against the wall below the arch. This was found to be when the distance from the level of the roof of the arch to the top of the wall, was equal to the entire depth from top of arch to the foot of wall, multiplied by the square root of the tangent of angle of maximum thrust, divided by twice the friction of the earth, multiplied by the tangent of the angle of maximum thrust. It followed from this result that in fluids, where the friction was 0, the arch should spring from the bottom of the wall. He had called this the tunnelling equation, because it showed what thickness of roof is sufficient to neutralize the pressure on the sides. We know how far to proceed with open cutting, and when it was necessary to cut the ground open, curb it and cover it in again, as where there was not sufficient thickness of roof for ordinary tunnelling; we know how strong to make the side walls, and what form to give them to resist the lateral thrust. These investi-

gations had reference to bridges, sustaining walls, sinking shafts, &c.; in sinking shafts it was not uncommon to sink for a considerable depth before curbing or securing by brickwork, from the supposition that the earth would stand of itself; and, therefore, that it will answer as well to begin the curbing lower down; but these investigations proved the danger of that mode of operation, and showed that if the top be well secured, the part below it will not move. These remarks were based on the supposition that the earth was homogeneous, and that the upper or secured part bore the due proportion to the lower. Mr. BUCKE then read a few remarks on the mathematical relations of the various lines and angles treated of in the foregoing paper.

Prof. MOSELEY stated, that M. PONCELET had lately investigated the same subject very fully, giving formulae and tables for their application by practical men; this work was published in the *Memoirs of the Academy*. All the subjects of which Mr. BUCKE had treated were investigated by M. PONCELET, except the important one of tunnelling.—Sir M. I. BRUNEL remarked, that it was dangerous for engineers to rely on formulae, which could not adapt themselves to every description of ground: an accurate knowledge of the different strata and their comparative densities was necessary. In the Thames Tunnel he had found ten or twelve different strata in the depth of eight feet, and from the constant fluctuation of the weight above them, and the fluid nature of some portion of the ground, theoretical inquiries would have been useless in determining the resistance necessary.—Mr. THOMSON wished to ask Mr. BUCKE, on the subject of retaining walls, whether he considered a wall broad at the base and tapering on both sides to the top, weaker than a parallel wall of the same amount of material; for instance, was a wall 6.6 throughout, better than a wall eight feet at bottom and three feet at top?—also did Mr. BUCKE approve of the common principle of making the wall with set-offs, or steps on the back side, which was considered to give stability to the wall by the weight of earth pressing directly on these set-offs, and thus keeping it firm on the foundation?—also of the batten or slope of the front of walls?—Mr. BUCKE considered the set-off wall weak as a sustaining wall: if the weight were advantageous, the set-offs might as well be filled up with brick, and in that case the wall assumed that conical form of section; for the more the back of the wall deviated from the perpendicular by sloping towards the earth, the greater the angle of maximum thrust became, and of course the thrust was more direct and injurious; he found a batten or slope of two inches in the foot advantageous.—Prof. VIGNOLES had made experiments on walls of all forms of section, well built and then filled in with earth behind; the experiments were under the direction of Sir John BURGOYNE. Of all these, two only had stood, which corroborated Mr. BUCKE's results, as they were a parallel wall inclining inwards, and a wall with perpendicular back and sloping front. Great attention should be paid to foundations, as he found a slight settling produce the overthrow of a wall.—Mr. BUCKE observed, in answer to Sir M. I. BRUNEL, that even in the case of fluid ground, theory assisted us in determining the resistance necessary. For example, in London clay, the friction in line of maximum thrust was $\frac{1}{2}$ of the weight: now by comparing the specific gravity of this clay with water, he found that where by the filtration of water this friction was reduced to $\frac{1}{3}$, the pressure was equal to hydraulic pressure, and when the friction was reduced to 0, it was double hydraulic pressure. In answer to Prof. VIGNOLES, he would say, that of course he supposed the foundations to be good in his calculations.—Prof. MOSELEY considered Prof. VIGNOLES's observations on foundations to be judicious. The reason of the great apparent injury from slight settlement was easily shown. The line of resultant pressure bisected the foundation of the wall. If the foundation continued firm, the wall might be supposed to turn on the toe of the wall, but if the foundation was bad, the entire turned on the toe of the foundation; and as this was bisected by the line of resultant pressure, it followed that a very slight settling would throw this line outside the base, and thereby tend to overturn the wall. In this consideration, any degree of fluidity might be included, as the pressure of earth was similar to the pressure of any fluid.

Sir J. ROBISON explained a new description of Wood Paving Blocks introduced in Paris. They used circular blocks instead of hexagons, and the blocks were supported one by another. One-sixth of the circumference of the block was cut out with a radius equal to the radius of the block, three of these grooves were made at equal distances to half the depth of the block, and then three similar grooves were cut in the lower half of the block, but so that the grooves above should be vertically over the portions left untouched in the lower half: thus each end of the block showed three flutes or grooves and three projections. When the blocks are put together, it is manifest that the groove in one fits the projection in the next one, which, at the same time, receives the lower half of the other, thus each supporting and strengthening its neighbour.

Mr. GRANTHAM read a paper 'On Iron as a Material for Shipbuilding.'—The form of least resistance was not safe in timber, though it was in iron, yet shipowners, missing the heavy timbers and thick planks, distrusted the thin plate and light ribs. He considered iron vessels superior in strength and durability, facility of uniting, comparative stowage, comfort and convenience, amount of expense; and from the source from which the materials were derived, he believed that, from all these advantages, wooden boats would soon be disused. As for the advantage in the outlay of money, the *Hindustan* had cost 72,000*l.*, of which about 12,000*l.* was for labour and 48,000*l.* for wood, and much of this was expended in the East Indies; but an iron ship of 72,000*l.* value would cost 67,000*l.* in labour, all expended in this country, and the remaining 5,000*l.* would also be paid here for the raw material. He then adverted to a new rolled keel, patented by Mr. Boydell. He would also state, to show the capability of iron boats to resist injury, that the *Acadia* had run down a small iron ferry boat, completely submerging it and tearing away all the wood work, &c., but the vessel rose like a cork as soon as the *Acadia* had passed over, the iron work being uninjured, and three men who were in the cabin were saved.

Mr. SCOTT RUSSELL laid on the table the Report of a Committee on the Form of Ships.—It contained upwards of 20,000 observations, the result of careful experiments on the resistance to models of ships of more than a hundred different forms and sizes, and extending from small models of 30 inches long, to vessels of 25 feet, 60 feet, and 200 feet long, and above 1,000 tons burden. These experiments were under the general superintendence of a Committee of the Association, consisting originally of Sir John Robison, Mr. Scott Russell, and Mr. Smith. Unfortunately, the ill-health of Mr. Smith's family had altogether deprived the committee of his advice and assistance, but the observations were personally conducted by Mr. Scott Russell, who had to acknowledge the pleasure he had derived from conferring with his friend Sir John Robison, with whom he had frequent occasion to consult during the progress of the observations. The smaller experiments had been made in a reservoir in the ground attached to his (Mr. Russell's) residence, and the larger ones in the open sea. It was probable that these results, maturely digested, and illustrated by accurate drafts of the forms of the ships subjected to experiment, would be published in such completeness as might be practically serviceable to the naval constructor and mercantile ship-builder; and he would, therefore, confine the present Report to a general account of the objects contemplated in the experiments, and the method by which these designs had been carried out. Several series of experiments have already been made, both by scientific bodies, and by public-spirited men, for the advancement of naval architecture. These had cost large sums of money, and consumed much valuable time and talent. To most of them it had been objected—unhappily not without reason—first, that they had not been conducted with an adequate knowledge of the wants of the constructor; secondly, that the forms of bodies submitted to experiment were by no means such as are used by the ship-builder; thirdly, that the scale on which these bodies were constructed was too small to claim for the results, as applied on a large scale, any considerable degree of confidence; fourthly, that it had not been established by what law the results of experiments on one scale of magnitude are to be transferred to a different scale, either greater or less; and, fifthly, that the apparatus

formerly used was liable to errors which it was difficult to eliminate from the results. To obviate such objections was one great object in these experiments. Mr. Russell had contrived a new apparatus, which was so simple and convenient, that a uniform propelling force was obtained, by which vessels of any magnitude might be drawn by a uniform mechanical force along any given distance. The forms of the models employed were not confined to mathematical and arbitrary solids, but were those of such classes of ships as are either actually employed in navigation, or have been proposed for that purpose. Among these were some of the highest reputation. It was found that there were other circumstances besides the form of the vessel which affected the result; and that the form and dimensions of the channel were as important as those of the vessel in determining it. Experiments had been instituted on the largest as well as the smallest scale, to show the law of relation between different scales. These various modes of experiment were illustrated by reference to drawings and tables which were prepared for publication. As an illustration of the value of giving a proper form to ships, altogether independently of proportion or dimension, the following remarkable experiments were adduced:—Four vessels, of about 25 feet length, having all the same dimensions of breadth and depth, of the same capacity and weight, and of the same draft of water, were towed together at the same time, under the same circumstances, and at the same velocity. Some writers on naval architecture have asserted that, in such circumstances, vessels would have precisely the same resistance. The forms of these four vessels were not, to an inexperienced eye, very dissimilar: they were all good sea boats, and each of them found its admirers to give its shape a preference over the others. These vessels, alike in all their principal dimensions, and weight, and area of midship section, and draft of water, differed so much in resistance, that the one had nearly double resistance to another: thus, at $7\frac{1}{2}$ miles an hour, the resistances were as follows:—

No. I. form.....	56.6 lb. resistance.
No. II.	131.5 —
No. III.	102.7 —
No. IV.	90.2 —

All of these were good sea boats, and it was one of the most valuable of these results, that No. I., the form of least resistance, was found also the best sea boat, the easiest, and the driest. The whole of the observations, comprising more than 20,000, were in the course of preparation for publication, so that the whole body of the observations would be at the disposal of the Members of the Association. It had been the aim of the Committee to reduce the whole into the form most immediately conducive to the purposes of the naval constructor and mercantile ship-builder, and the drawings had been made on the scale and with the accuracy of the drafts of ships of the largest class.

Sir JOHN ROBISON felt it his duty to state to the Section, that although he had cordially given Mr. Scott Russell his co-operation in forwarding these experiments, and although Mr. Russell had made frequent use of the plural pronoun, yet that the whole of the merit, both of contriving, and designing, and carrying out the system of experiment, was due exclusively to Mr. Russell.

Mr. RUSSELL also explained a model showing the waves in a channel arising from the natural channel wave and the wave resulting from the form of the boat.

Mr. WILLIAMS wished to know how Mr. Russell tested the horse power in the two boats which he had mentioned, as nominal power was not a fair test; and also whether he had paid attention to the difference in draught after the engines had been put in, the settling at stern or stem, &c., as the putting in the engine might make the vessel which had been slowest, when towed, fastest when driven by her own power—a vessel quick in slow water, might be slow in a rapid current—in fact, every vessel had its own characteristic, and therefore many circumstances entered into the comparison between two vessels.—Mr. Russell said, that a reference to the Report would show the steps which had been taken to insure accuracy. Of course in making experiments he had attended to all the circumstances which could introduce inaccuracy. In answer to Mr. Williams, he would say, that when the vessels were towed, the engines, stores,

coals, &c. were exactly the same as when the engines were working; in fact, they had merely detached the tow rope and started the engines, and it so happened that the vessel which had been fastest in towing was also fastest in sailing with her own engines working, but he did not consider this as affecting the question.

Prof. MOSELEY then read a paper 'On his Constant Indicator,' and gave the results of the experiments at the East London Waterworks, (see *Athen.* No. 722, p. 679).

Prof. VIGNOLES then exhibited some specimens of newly invented carpet tapestry. He explained that these works were made on the principle of the ancient mosaics, being composed of innumerable transverse sections of woollen threads. No painting, no colouring was used; all the effect was produced by ends of worsted about $\frac{1}{4}$ of an inch long standing vertically, one end being seen, and the other cemented by India rubber to a cloth. The exact operation was yet a secret, but he believed that two frames of fine wire or perforated zinc (some with even 4,000 perforations in an inch) were placed over each other exactly vertically, the distance being only regulated by the height of the room, in the present instance he believed about five feet. The picture to be copied being then traced on the top side of the upper frame, a workman passed threads of dyed wool through the corresponding holes in the top and bottom frames, of course, as in tapestry, varying his shades and colours until he is satisfied with the effect; this he can judge of by looking down on the upper ends of the threads, although to a person looking at the space between the frames, there seems only a confused and compact mass of worsted. When the workman is satisfied, the upper ends of the threads are covered with India rubber cement, and a cloth is laid upon them also covered with cement; the ends of the threads firmly adhere to this cloth. By means of a sharp cutting instrument, the entire mass of threads is now cut through transversely at about $\frac{1}{4}$ of an inch from the cloth, and this process being repeated, a fresh copy is obtained from every $\frac{1}{4}$ of an inch: in the present frames, being five feet apart, 480 copies can be cut, and as there is no limit to the distance, except the height of the apartment, thousands of copies may be taken of each: were this not the case, the invention, however ingenious, would be too expensive to be purchased except in solitary instances as specimens of curious art: but, from the facility of reproduction, this fabric was likely to come into general use for carpets, rugs, curtains, table and chair covers, &c.; for carpets and rugs it could be made with a longer nap, so as to give any degree of substance.

Capt. SLEIGH gave an account of his Floating Breakwater. It would be impossible to give a clear idea of this structure without reference to the model. As the Captain has published a pamphlet on the subject, illustrated with diagrams, those who are interested can refer to it.

Mr. FAIRBAIRN, Mr. WILLIAMS, and Prof. VIGNOLES, all expressed their opinion that the difficulty of safe mooring would be fatal to the plan. Mr. Fairbairn considered the plan of presenting as it were an artificial beach to break the force of the waves the best he had yet seen, but the question was not whether this artificial beach would be serviceable if fixed, but how to keep it fixed.—Mr. Bucke said, that a floating breakwater was an impossibility; nothing could break the water if it floated; it should be fixed to effect that purpose. A momentary amelioration of the force of the wave, was not worth the expense of the breakwater.

8, New Burlington-street, July 16, 1841.
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